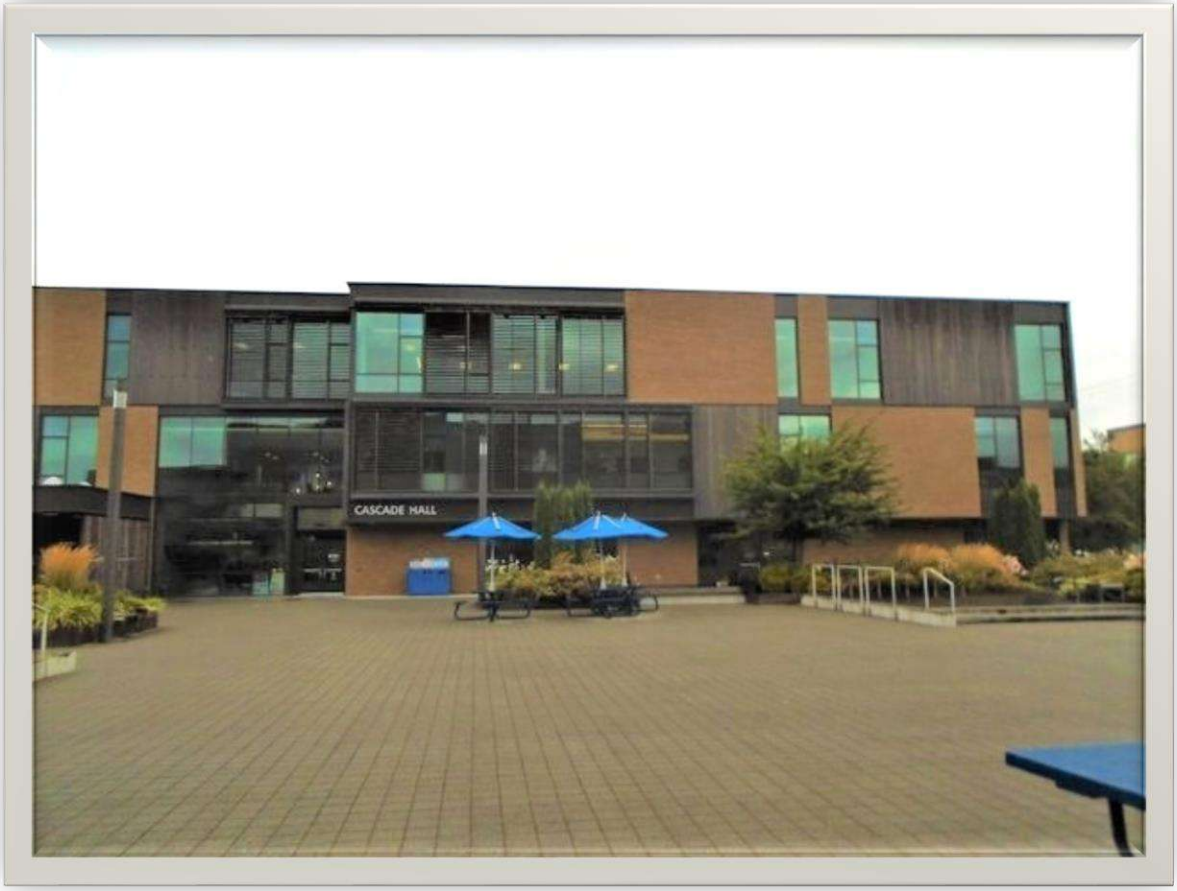
PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Cascade Hall
Asset 2005

Inspected September 11, 2018



ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

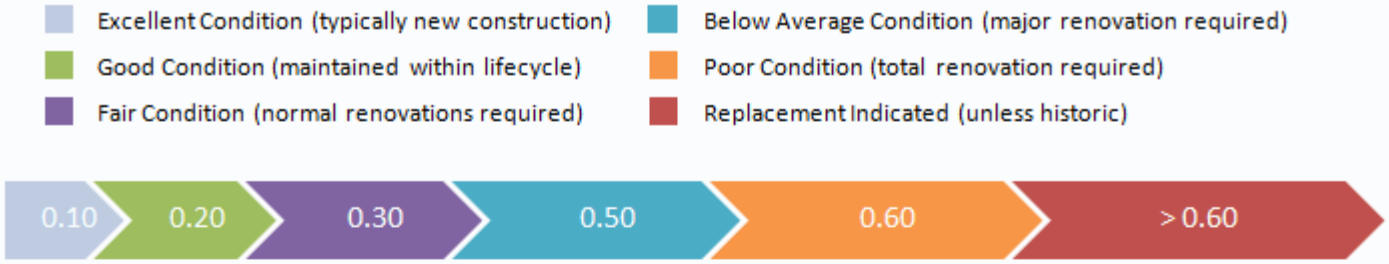
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

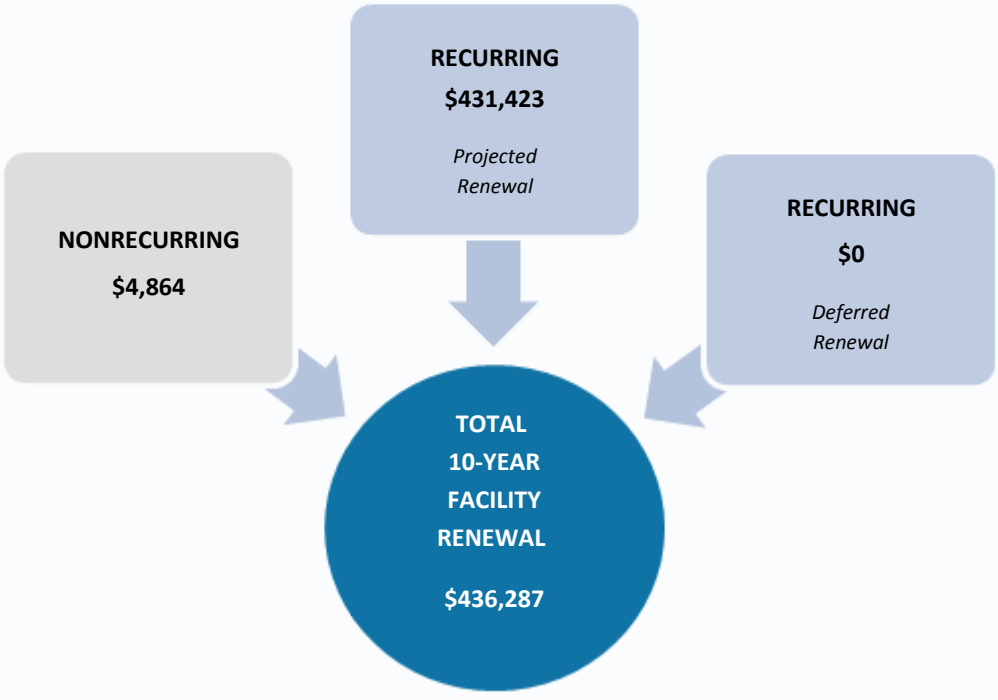
ASSET CODE	2005		
ASSET NAME	CASCADE HALL	**CURRENT REPLACEMENT VALUE**	$20,210,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.02
YEAR BUILT	2014	**FACILITY CONDITION INDEX**	0.00
GSF	49,210	**10-YEAR $/SF**	8.87
INSPECTION DATE	09/11/2018		

FCNI Scale

The FCNI for this asset is **0.02**



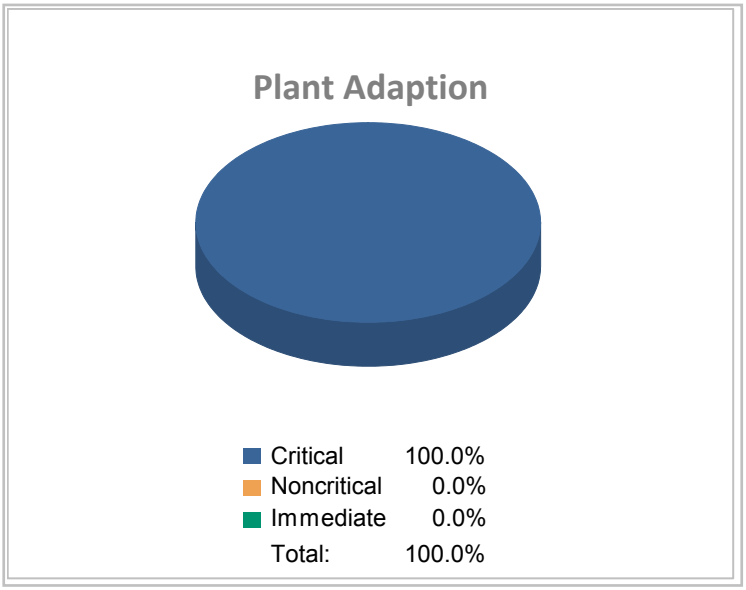
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

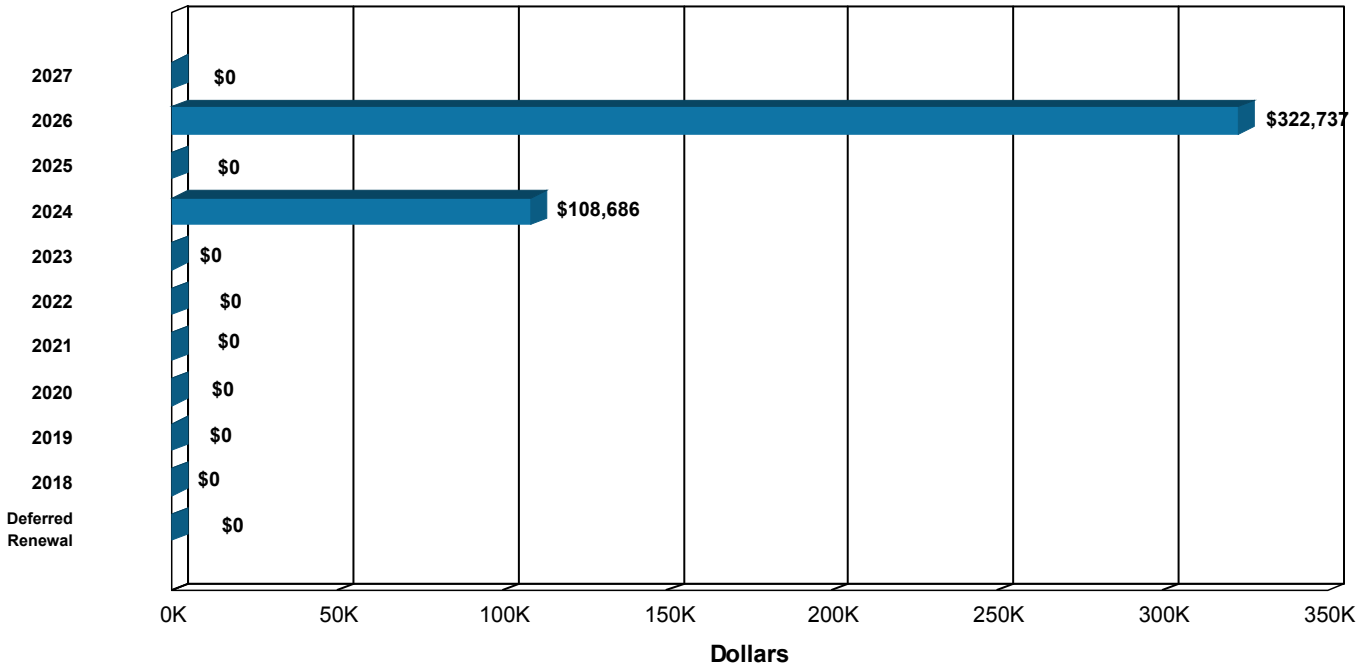
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$4,864**
3 - Noncritical	**$0**



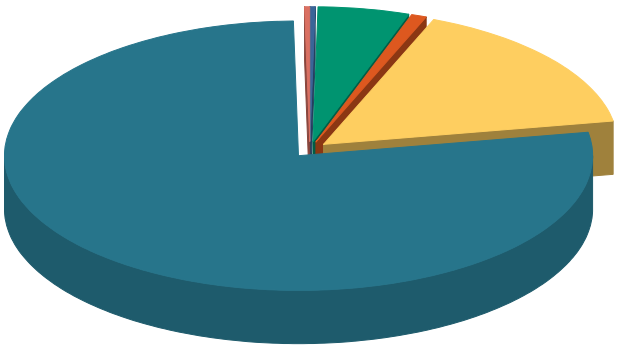
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$1,746	0%
Electrical	$0	0%
Exterior	$21,591	5%
Fire/Life Safety	$3,118	1%
Health	$0	0%
HVAC	$71,041	16%
Interiors	$337,801	77%
Plumbing	$990	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$436,287**	

ASSET SUMMARY

Cascade Hall is a 49,000 square foot academic building with faculty workspace and 14 general-purpose classrooms on the Portland Community College, Cascade campus. It houses the Center for Careers in Education, Portland Teachers Program, and a childcare center. This three-story building has flat roofs and exterior walls of brick and wood veneer systems. It was constructed in 2014 along with the Student Union and the underground parking garage which forms part of the base of Cascade Hall.

Information for this report was gathered during a site visit conducted on September 11, 2018.

Site

Cascade Hall faces the Student Union across a plaza area which is the roof of the underground parking garage. This facility is north of the Student Union and bounded on the north by North Jessup Street. The site is flat and surrounded on all sides by concrete pedestrian sidewalks with mature and well-maintained landscaping on the south side. The south side of the site also includes a play yard for the child care center which is fenced with a steel and wood fence that is in good condition.

Exterior Structure

The roof is an asphaltic membrane in good condition. Exterior walls are a combination of brick and wood veneer systems that are also in good condition. The roof has four solar-tube style skylights which should not need to be replaced in the next ten years. The windows are storefront systems and the exterior doors are both flush hollow metal and aluminum and glass storefront. All of these exterior finishes are expected to last another ten or more years.

Interior Finishes/Systems

Floor finishes include sheet vinyl, carpet, and polished, sealed concrete. These finishes are relatively new and in good condition. However, the carpet and sealed concrete will reach the end of their expected lifecycles in the next ten years and should be replaced or renewed. The interior walls are either painted, ceramic tile, or wood paneling. The tile and wood paneling should last beyond the next ten years, but it is recommended that the painted walls be repainted within the next few years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors and hardware, as well as the break room, workroom, and child care area casework, are in good condition with no recommendations at this time.

Accessibility

This building was constructed in compliance with accessibility requirements. The entrances are at grade level and some have powered door openers. The door hardware and signage is compliant with accessibility standards and the restrooms provide the required accessible features. The elevator has an accessible control panel, and the stairs have compliant railings. However, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The lower level of the stairwell at room 207 has low headroom which should be guarded with rails to prevent injury to visually impaired building occupants.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits is adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room BDF1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is in excellent condition with substantial remaining service life. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional, fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations at this time. However, a stove in room 101L does not have a direct fire suppression system. It is recommended that a residential-grade, wet-chemical fire suppression system be installed over the stove.

HVAC

An Aaon rooftop package unit provides heating (natural gas) and cooling (R410A DX refrigerant) for the building. The AHU contains two supply fans, two exhaust fans, and a heat wheel. Distribution equipment consists of metal ductwork believed to be equipped with variable air volume (VAV) boxes and the controls are a digital application. The HVAC equipment is in excellent condition and has substantial remaining service life. However, a partial control upgrade may need to be considered within the scope of this report. The facility also incorporates ductless split systems and split systems to either provide

cooling only or heating and cooling to select rooms. The equipment is charged with R410 DX refrigerant. This unitary equipment is new and should outlast the scope of this report. Facility exhaust is provided by rooftop centrifugal fans that serve restrooms, mechanical spaces, and general exhaust needs. The fans are in excellent condition with no recommendations.

Electrical

Power is supplied to the facility from underground utilities at 480/277 volts from a transformer believed to be owned by the local utility. A 1,000 amp main switchboard in the electrical room receives the power for distribution and is in excellent condition. The switchboard should continue to serve the facility beyond the scope of this report.

The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures with acrylic, mesh screen, or no lenses. The lighting is lamped with T8 fluorescent bulbs and additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition with remaining service life beyond the scope of this report.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures with additional lighting provided by pole-mounted fixtures and lighting from the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage.

Emergency power is provided by a district source with two automatic transfer switches providing the power for distribution. The emergency power equipment appears to be well maintained, is in good condition, and should outlast the scope of this report

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the supply fans, exhaust fans, and heat wheel. The VFDs are new and in excellent condition.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers protect the water supply from cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems and backflow preventers are in excellent condition and no issues were reported during the site visit. The equipment has remaining service life beyond the scope of this report.

Domestic hot water is provided by an A.O. Smith commercial-grade, gas-fired water heater with a tank capacity of 100 gallons and a heating capacity of 199 MBH. A small pump and expansion tank support the equipment. The domestic water heating equipment has remaining service life beyond the scope of this report. Additionally, there is an instantaneous water heater in room 306. The unit appears to be in adequate condition, but based on age it will reach the end of its service life within the scope of this report and may need to be replaced.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of these fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

This three-story facility has a Kone machine-room-less (MRL) passenger elevator. The unit has a car capacity of 2,000 pounds and is controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection with no recommendations.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

September 11, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	1,746	0	0	0	0	0	0	0	0	0	0	0	0	$1,746
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	21,591	0	$21,591
INTERIOR	0	0	0	0	0	0	0	0	0	0	36,655	0	301,146	0	$337,801
PLUMBING	0	0	0	0	0	0	0	0	0	0	990	0	0	0	$990
HVAC	0	0	0	0	0	0	0	0	0	0	71,041	0	0	0	$71,041
FIRE/LIFE SAFETY	0	3,118	0	0	0	0	0	0	0	0	0	0	0	0	$3,118
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$4,864	$0	$0	$0	$0	$0	$0	$0	$0	$108,686	$0	$322,737	$0	$436,287
TOTAL NONRECURRING PROJECT NEEDS			$4,864	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$431,423	

CURRENT REPLACEMENT VALUE	$20,210,000
FACILITY CONDITION NEEDS INDEX	0.02
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
49,210	$436,287	$8.87

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$1,746	$0	$1,746
EXTERIOR	$0	$21,591	$21,591
INTERIOR	$0	$337,801	$337,801
PLUMBING	$0	$990	$990
HVAC	$0	$71,041	$71,041
FIRE/LIFE SAFETY	$3,118	$0	$3,118
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$4,864**	**$431,423**	**$436,287**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2005AC01	INTERIOR RAILING UPGRADES	C2020	2	Plant Adaption	1,746
2005FS01	INSTALL RANGE FIRE SUPPRESSION SYSTEM	D4090	2	Plant Adaption	3,118
				TOTAL	**$4,864**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2005	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2024	36,655
2005	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		306	D2020	2024	990
2005	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2024	46,391
2005	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2024	24,650
2005	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2026	3,786
2005	DR36	DOOR PANIC HARDWARE, EXTERIOR			PLAY YARD	B2030	2026	3,561
2005	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2026	14,244
2005	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	134,359
2005	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	166,787
							TOTAL	**$431,423**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2005FS01	INSTALL RANGE FIRE SUPPRESSION SYSTEM	2	$3,118
2	2005AC01	INTERIOR RAILING UPGRADES	2	$1,746
		TOTAL FOR PLANT ADAPTION		**$4,864**
		GRAND TOTAL:		**$4,864**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	2005AC01	2	Plant Adaption	INTERIOR RAILING UPGRADES	$1,746
				TOTAL FOR ACCESSIBILITY	**$1,746**
1	2005FS01	2	Plant Adaption	INSTALL RANGE FIRE SUPPRESSION SYSTEM	$3,118
				TOTAL FOR FIRE/LIFE SAFETY	**$3,118**
				GRAND TOTAL:	**$4,864**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INSTALL RANGE FIRE SUPPRESSION SYSTEM

Project Number:	2005FS01
Priority Sequence:	1
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/13/2018

Category Code: FS3D

System:	FIRE/LIFE SAFETY
Component:	SUPPRESSION
Element:	OTHER

Code Application:		Subclass/Savings:	Project Location:
NFPA	2001	Not Applicable	Room Only: Floor(s) 1

Description

There is no permanent fire suppression system directly over the stove in room 101L. It is recommended that a residential range-top fire suppression system be installed over the stove.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Residential wet chemical, range-top fire suppression system	EA	1	$2,000	$2,000	$250	$250	$2,250
			Base Material/Labor Costs	**$2,000**		**$250**	
			Indexed Material/Labor Costs	**$1,988**		**$252**	**$2,240**
					Construction Mark Up at 20.0%		**$448**
					Original Construction Cost		**$2,688**
Date of Original Estimate: 12/13/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$2,688**
					Professional Fees at 16.0%		**$430**
					TOTAL PROJECT COST		**$3,118**

All costs shown as Present Value

INTERIOR RAILING UPGRADES

Project Number:	2005AC01	**Category Code:** AC3B	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/29/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.2	Not Applicable	Floor-wide: Floor(s) 2

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The lower level of the stairwell at room 207 has low headroom which should be guarded with rails to prevent injury to those who are visually impaired.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	15	$45.53	$683	$38.05	$571	$1,254
			Base Material/Labor Costs	**$683**		**$571**	
			Indexed Material/Labor Costs	**$679**		**$575**	**$1,254**
					Construction Mark Up at 20.0%		**$251**
					Original Construction Cost		**$1,505**
Date of Original Estimate:	11/29/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$1,505**
					Professional Fees at 16.0%		**$241**
					TOTAL PROJECT COST		**$1,746**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW07	WALL, EXTERIOR, SIDING, WOOD BOARD, PREMIUM				4,210	SF	1.12	$74,518	2014	40		2054
WN05	GLASS, STOREFRONT				7,560	SF	1.12	$1,067,364	2014	40		2054
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				12	LEAF	1.00	$36,267	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				4	LEAF	1.00	$8,026	2014	40		2054
DR28	DOOR OPERATOR, POWER-ASSIST				3	EA	1.00	$20,311	2014	20		2034
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				4	EA	1.00	$3,786	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR				12	EA	1.00	$14,244	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR			PLAY YARD	3	EA	1.00	$3,561	2014	12		2026
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH				16,500	SF	1.00	$239,229	2014	20		2034
RR23	ROOF SKYLIGHT - PLASTIC DOME	LIGHT TUBES			64	SF	1.00	$11,585	2014	20		2034
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				36	LEAF	1.00	$79,612	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			30	LEAF	1.00	$110,056	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			26	LEAF	1.00	$95,382	2014	60		2074
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			36	EA	1.00	$27,104	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			30	EA	1.00	$22,587	2014	35		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR26	DOOR PANIC HARDWARE, INTERIOR				26	EA	1.00	$30,861	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRM, BRK RM	20	LF	1.00	$11,218	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			CHILD CARE	120	LF	1.00	$67,306	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				48,140	SF	1.00	$134,359	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				2,770	SF	1.00	$112,189	2014	60		2074
IW07	WALL FINISH - WOOD PANEL, PREMIUM				4,430	SF	1.00	$198,757	2014	80		2094
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				14,000	SF	1.00	$166,787	2014	12		2026
IF05	FLOORING - VINYL RESILIENT, TILE OR ROLL				10,480	SF	1.00	$231,679	2014	20		2034
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				10,480	SF	1.00	$36,655	2014	10		2024
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				29,700	SF	1.00	$330,566	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				5,240	SF	1.00	$14,625	2014	24		2038
VT01	ELEVATOR MODERNIZATION - TRACTION - LOW RISE 2-8 FLOORS	ELEV-1		M1-1	1	EA	1.00	$368,695	2014	25		2039
DF01	DRINKING FOUNTAIN, DUAL-LEVEL			INDOOR	3	EA	1.00	$8,082	2014	25		2039
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	CHILD CARE PLAY AREA		PLAY AREA	1	EA	1.00	$2,694	2014	25		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	CHILD SCALED			3	EA	1.00	$4,053	2014	35		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	STANDARD			16	EA	1.00	$21,619	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN				13	EA	1.00	$10,043	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				4	EA	1.00	$6,657	2014	50		2064
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	CHILD SCALED			5	EA	1.00	$8,475	2014	35		2049
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	STANDARD			17	EA	1.00	$28,814	2014	35		2049
BF01	BACKFLOW PREVENTER (<=1 INCH)			J1-1	1	EA	0.75	$755	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)			J2-1	1	EA	0.75	$755	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)			J3-1	1	EA	0.75	$755	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)			M1-2A	1	EA	0.75	$755	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)			J1-2	1	EA	0.75	$755	2014	20		2034
BF02	BACKFLOW PREVENTER (1-2 INCHES)			M1-2A	1	EA	1.25	$2,793	2014	20		2034
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				49,210	SF	1.00	$563,498	2014	50		2064
TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL	0000005544	M1-2A	10	GAL	1.00	$1,008	2014	30		2044
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	GWH-1	0000005543	M1-2A	199	MBH	1.00	$16,468	2014	25		2039
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		306	1	EA	1.00	$990	2014	10		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PD02	DRAIN PIPING SYSTEM - CLASSROOM				49,210	SF	1.00	$845,443	2014	60		2074
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-AB-1-2	0000005550	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-AB-2-2	0000005551	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-AB-3-2	0000005552	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	BDF_FC-AB-1-21	0000005562	BDF	3	TON	1.00	$5,611	2014	30		2044
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	FC-AB-2-13_IDF2-1	0000005545	IDF2-1	3	TON	1.00	$5,611	2014	30		2044
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	FC-AB-3-12_IDF3-1	0000005548	IDF3-1	3	TON	1.00	$5,611	2014	30		2044
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-1-1	0000005559	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-2-1	0000005560	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-3-1	0000005561	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-1-1	0000005559	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-2-1	0000005560	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-3-1	0000005561	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-1-1	0000005559	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-2-1	0000005560	ROOF	8	TON	1.00	$25,840	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	CU-AB-3-1	0000005561	ROOF	8	TON	1.00	$25,840	2014	20		2034
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	F-AB-1	0000005558	ROOF	1	EA	1.00	$3,773	2014	25		2039
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	F-AB-2	0000006867	ROOF	1	EA	1.00	$8,436	2014	25		2039
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	F-AB-3	0000006868	ROOF	1	EA	1.00	$8,436	2014	25		2039
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				49,210	SF	1.00	$1,750,606	2014	45		2059
PH01	PUMP - ELECTRIC (<=10 HP)	CP-1	0000006865	M1-2A	1	HP	1.00	$1,693	2014	30		2044
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	AAON	0000005549	ROOF	45	TON	1.00	$298,939	2014	25		2039
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				49,210	SF	1.00	$166,712	2014	20		2034
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				49,210	SF	1.00	$46,391	2014	10		2024
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				49,210	SF	1.00	$24,650	2014	10		2024
FS01	FIRE SPRINKLER SYSTEM - WET				49,210	SF	1.00	$665,744	2014	80		2094
FA01	FIRE ALARM SYSTEM - DEVICES				49,210	SF	1.00	$211,506	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		BDF1-01	1	EA	1.00	$13,857	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		BDF1-01	1	EA	1.00	$13,857	2014	18		2032
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				49,210	SF	1.00	$1,222,037	2014	50		2064

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	CH-MDP	0000006548	E1-1	1,000	AMP	1.00	$74,984	2014	40		2054
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HW	0000005557	ROOF	1	HP	1.50	$1,090	2014	15		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	EF-1	0000005555	ROOF	7	HP	1.07	$4,956	2014	15		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	EF-2	0000005556	ROOF	7	HP	1.07	$4,956	2014	15		2029
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	SF-1	0000005553	ROOF	10	HP	1.00	$5,554	2014	15		2029
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	SF-2	0000005554	ROOF	10	HP	1.00	$5,554	2014	15		2029
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			40	EA	1.00	$20,342	2014	20		2034
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			8	EA	1.00	$6,173	2014	20		2034
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	2	EA	1.00	$3,895	2014	40		2054
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	2	EA	1.00	$2,503	2014	20		2034
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				49,210	SF	1.00	$552,612	2014	20		2034
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				24,605	SF	1.00	$56,507	2014	20		2034
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	ATS-CH-E	0000005563	E1-01	60	AMP	1.00	$5,220	2014	25		2039
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-CH-S	0000005564	E1-01	125	AMP	1.00	$4,963	2014	25		2039
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT	STEEL PICKET			75	LF	1.60	$5,808	2014	30		2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT	STEEL AND WOOD			150	LF	1.60	$11,616	2014	30		2044
								Grand Total:	**$10,534,498**			

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2005 for DR

No Projected Component Replacement Cost for Asset No. 2005 for 2018

No Projected Component Replacement Cost for Asset No. 2005 for 2019

No Projected Component Replacement Cost for Asset No. 2005 for 2020

No Projected Component Replacement Cost for Asset No. 2005 for 2021

No Projected Component Replacement Cost for Asset No. 2005 for 2022

No Projected Component Replacement Cost for Asset No. 2005 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		49,210	SF	$29,433	2024

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		49,210	SF	$55,393	2024
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,182	2024
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		10,480	SF	$43,768	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$129,777**	

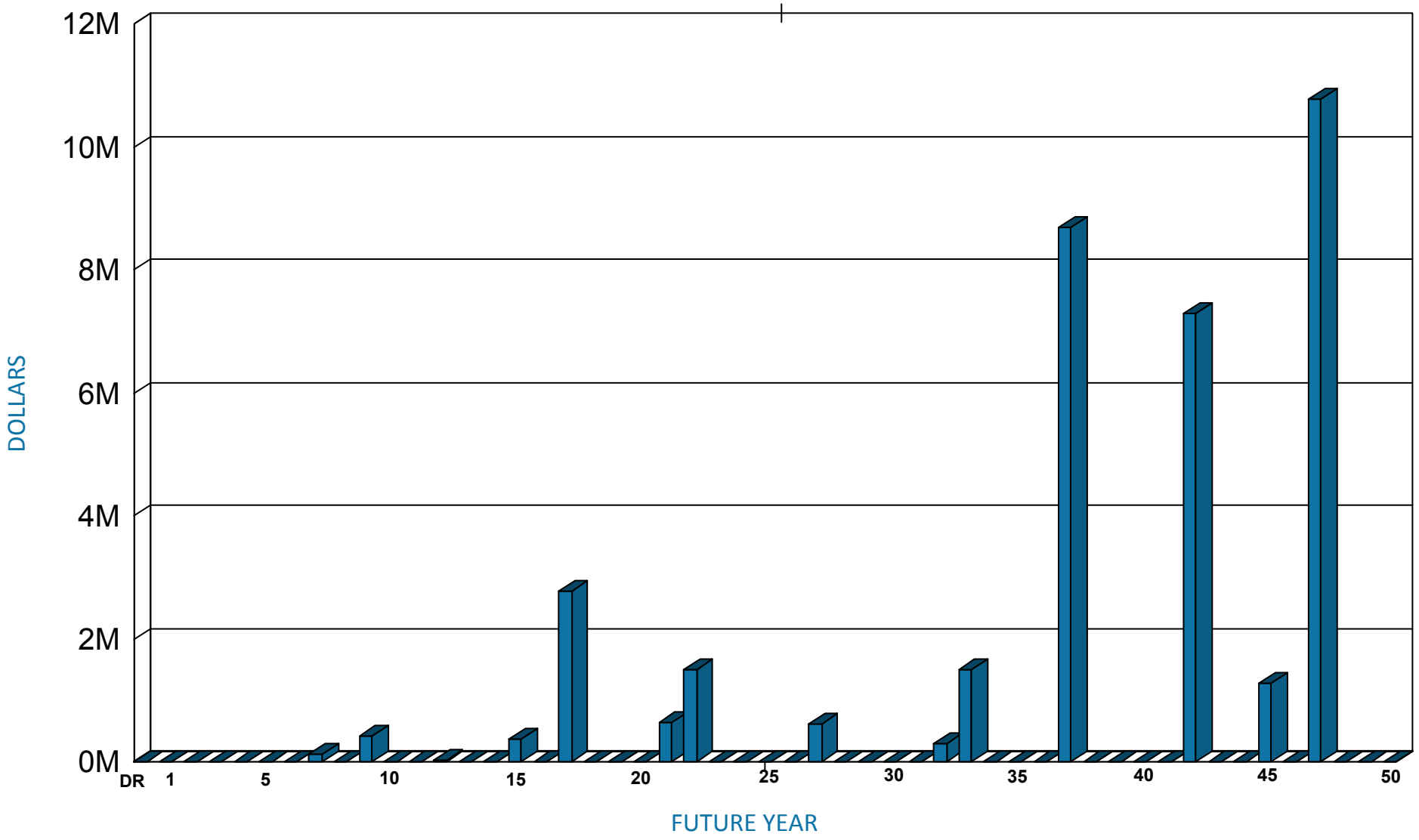
No Projected Component Replacement Cost for Asset No. 2005 for 2025

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		48,140	SF	$170,202	2026
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		4	EA	$4,796	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		12	EA	$18,044	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		3	EA	$4,511	2026
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		14,000	SF	$211,280	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$408,833**	

No Projected Component Replacement Cost for Asset No. 2005 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



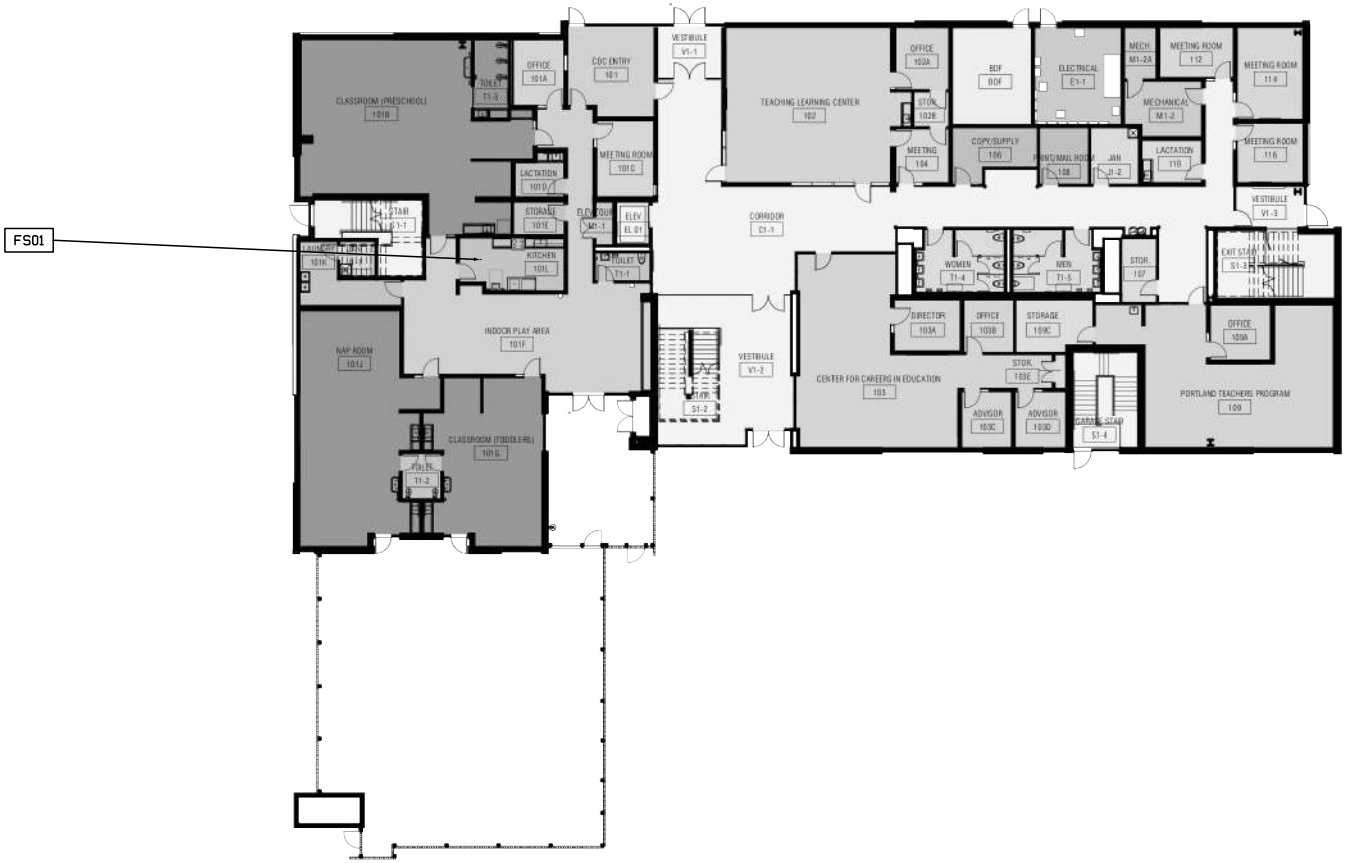
Average Annual Renewal Cost per SF $4.98

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



CASCADE HALL

BLDG NO. 2005

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE

AC01

CASCADE HALL

BLDG NO. 2005

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

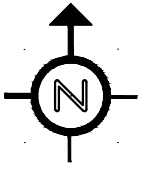
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE



CASCADE
HALL

BLDG NO. 2005

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

2005001a 9/11/2018

Sink and area finishes

Room 101J

2005001e 9/11/2018

Exterior lighting

South elevation

2005002a 9/11/2018

Child scaled water closets and accessories

Room T1-2

2005002e 9/11/2018

Occupancy sensor and interior lighting

First floor, room 101J

2005003a 9/11/2018

Drinking fountains in the play area

South elevation

2005003e 9/11/2018

Drain and supply piping

First floor, room 101J

2005004a 9/11/2018
Child care play area interior fence
South elevation

2005004e 9/11/2018
Elevator controller
First floor, room M1-1

2005005a 9/11/2018
Child care play area interior fence
South elevation

2005005e 9/11/2018
Drain and supply piping
First floor, room 101D

2005006a 9/11/2018
Casework and sink
Room 101B

2005006e 9/11/2018
Interior lighting
First floor, room 101C

2005007a 9/11/2018

Accessible drinking fountains

Room 101F

2005007e 9/11/2018

Lack of fire suppression

First floor, room 101L

2005008a 9/11/2018

Exit doors, hardware, and signage

Room 101F

2005008e 9/11/2018

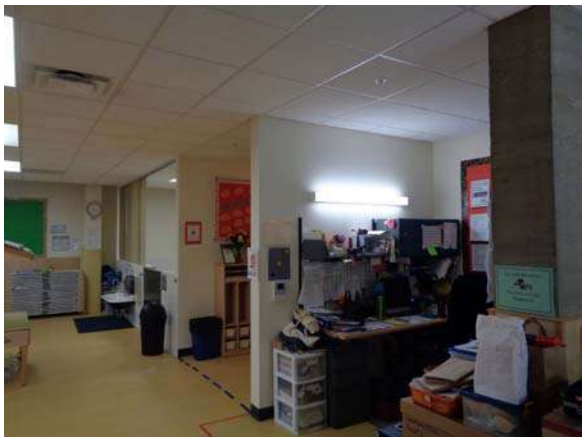
Drain and supply piping

First floor, room 101L

2005009a 9/11/2018

Accessible water closet and accessories

Room T1-1



2005009e 9/11/2018

Interior lighting

First floor, room 101B

2005010a 9/11/2018

Kitchen casework, sink, and appliances

Room 101L

2005010e 9/11/2018

Interior lighting

First floor, room 101K

2005011a 9/11/2018

Sinks and area finishes

Room 101L

2005011e 9/11/2018

Drain piping

First floor, room 101K

2005012a 9/11/2018

Laundry area utility sink

Room 101K

2005012e 9/11/2018

Interior lighting

First floor, room J1-1

2005013a 9/11/2018

Accessible elevator control panel

Elevator

2005013e 9/11/2018

Car operating panel

Elevator

2005014a 9/11/2018

Stair with compliant guard at low headroom

Stair S1-3

2005014e 9/11/2018

Electronic vents

Roof

2005015a 9/11/2018

Accessible casework and sink

Room 110

2005015e 9/11/2018

Condensing units

Roof

2005016a 9/11/2018

Typical office area finishes

Room 114

2005016e 9/11/2018

Exhaust fan

Roof

2005017a 9/11/2018

Exit doors and hardware

Vestibule V1-3

2005017e 9/11/2018

Condensing units

Roof

2005018a 9/11/2018

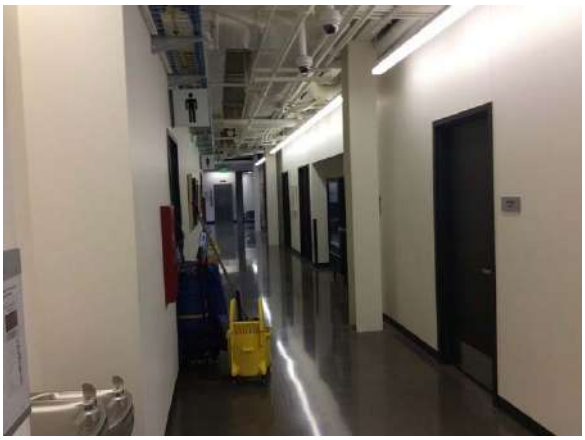
Typical corridor finishes

Corridor C1-1

2005018e 9/11/2018

Air handling unit

Roof



2005019a 9/11/2018

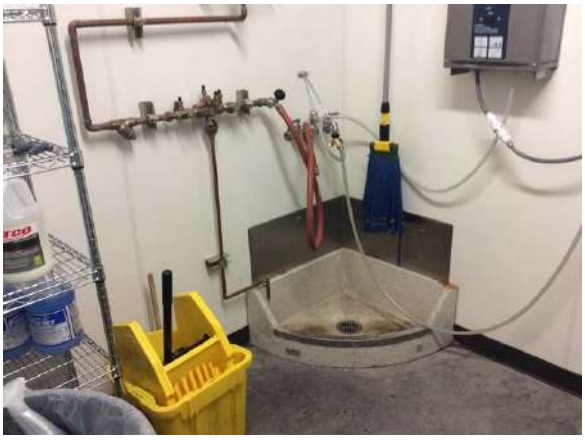
Typical corridor finishes

Corridor C1-1

2005019e 9/11/2018

VFDs

Roof, AHU



2005020a 9/11/2018

Utility sink

Room J1-2

2005020e 9/11/2018

Exhaust fan

Roof, AHU

2005021a 9/11/2018

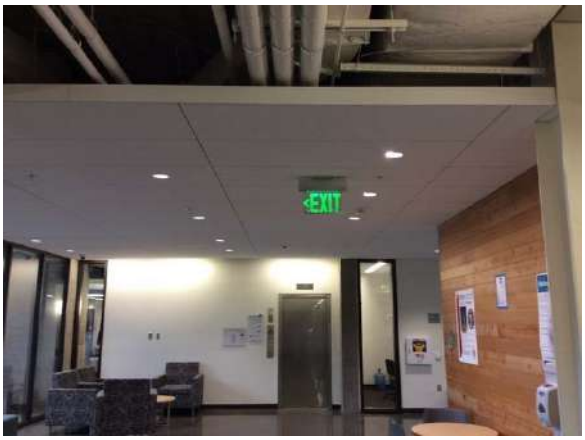
Suite exit door and sign

Room 102

2005021e 9/11/2018

Interior lighting

Third floor, room 303



2005022a 9/11/2018
Wall finishes, ceiling cloud, and exposed utilities
Corridor C1-1

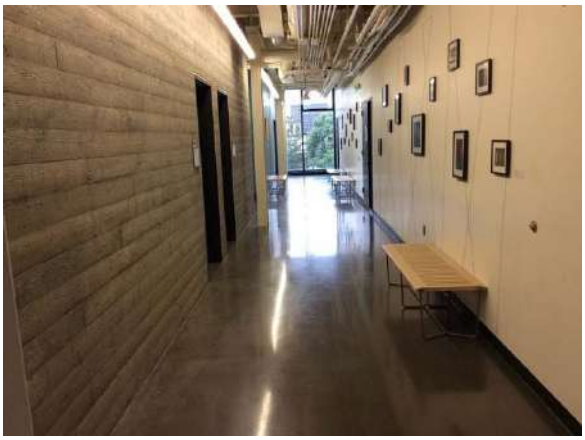
2005022e 9/11/2018
Interior lighting
Third floor, room 304

2005023a 9/11/2018
Typical classroom finishes
Room 304

2005023e 9/11/2018
Instant water heater
Third floor, room 306

2005024a 9/11/2018
Roof membrane, fall protection tie-offs, and skylights
Lower roof

2005024e 9/11/2018
Occupancy sensor and interior lighting
Third floor, women's restroom



2005025a 9/11/2018

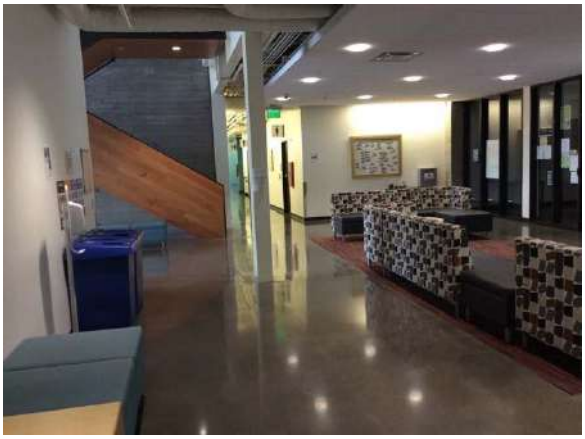
Typical corridor finishes

Corridor C2-1

2005025e 9/11/2018

Panelboards

Third floor, room E3-1



2005026a 9/11/2018

Typical corridor finishes

Corridor C2-1

2005026e 9/11/2018

Evaporator

Third floor, room IDF3-1

2005027a 9/11/2018

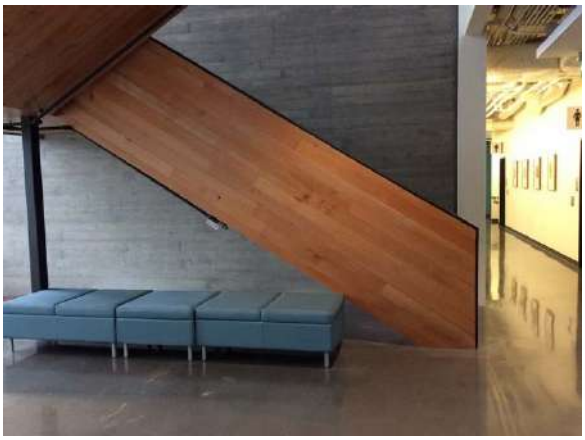
Typical office area finishes

Room 208

2005027e 9/11/2018

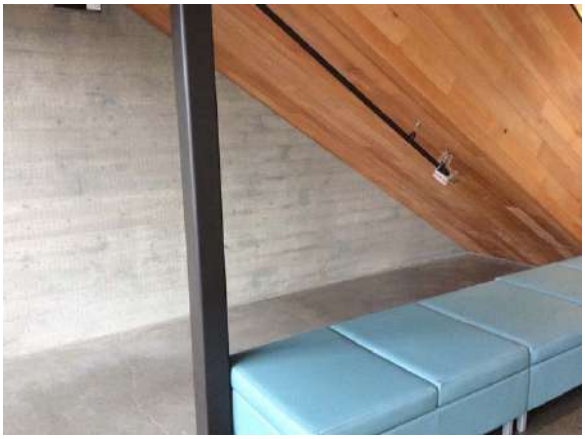
Fan coil unit

Third floor, corridor C3-1



2005028a 9/11/2018
Stair with unprotected low headroom
Study area 207

2005028e 9/11/2018
Interior lighting
Second floor, room 201



2005029a 9/11/2018
Stair with unprotected low headroom
Study area 207

2005029e 9/11/2018
Evaporator
Second floor, room 202

2005030a 9/11/2018
Lavatories and finishes
Room T3-1

2005030e 9/11/2018
Interior lighting
Second floor, room 208

2005031a 9/11/2018

Accessible water closet and accessories

Room T3-1

2005031e 9/11/2018

Interior lighting

Second floor, room 209

2005032a 9/11/2018

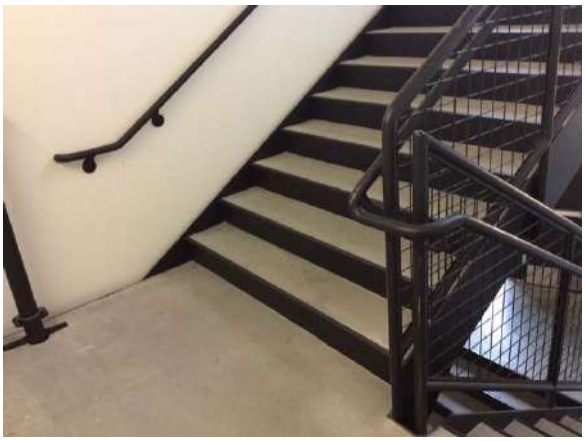
Accessible drinking fountains

Corridor C3-1

2005032e 9/11/2018

Backflow preventer

Third floor, J3-1



2005033a 9/11/2018

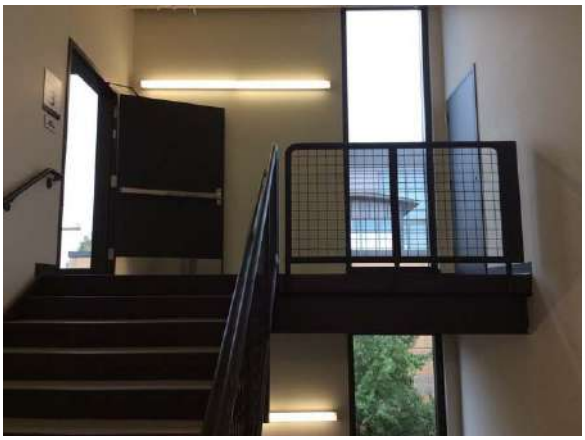
Stair with compliant handrails

Stair S3-1

2005033e 9/11/2018

Backflow preventer

First floor, room M1-2A



2005034a 9/11/2018

Stair with compliant handrails

Stair S3-1

2005034e 9/11/2018

Backflow preventer

First floor, room M1-2A

2005035a 9/11/2018

Roof membrane and fall protection tie-offs

Roof

2005035e 9/11/2018

Water heater

First floor, room M1-2A

2005036a 9/11/2018

Roof drain and overflow drain

Roof

2005036e 9/11/2018

Pump equipment

First floor, room M1-2A

2005037a 9/11/2018

Roof access

Roof

2005037e 9/11/2018

Interior lighting

First floor, room M1-2A

2005038a 9/11/2018

Roof access ladder

Stair S3-1

2005038e 9/11/2018

Switchboard and transformer

First floor, room E1-1

2005039a 9/11/2018

Stairwell door, hardware, and signage

Corridor C3-1

2005039e 9/11/2018

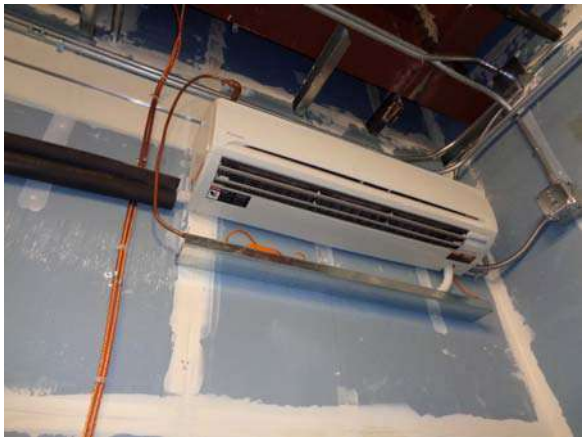
Automatic transfer switches

First floor, room E1-1

2005040a 9/11/2018

Glazing system with louvered covers

Room 306



2005040e 9/11/2018

Evaporator

First floor, room E1-1

2005041a 9/11/2018

Office area open to floor below

Room 306

2005041e 9/11/2018

Evaporator

First floor, room E1-1

2005042a 9/11/2018

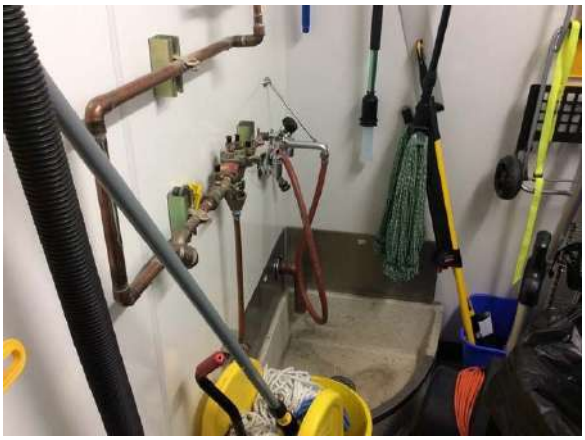
Detail at the glazing system and louvered cover

Room 306

2005042e 9/11/2018

Fire alarm panels

First floor, room BDF1-1



2005043a 9/11/2018

Utility sink

Room J3-1

2005043e 9/11/2018

Evaporator

First floor, room BDF1-1

2005044a 9/11/2018

Exterior finishes and site conditions

East elevation

2005044e 9/11/2018

Exterior lighting

North elevation

2005045a 9/11/2018

Exterior finishes and site conditions

North elevation

2005045e 9/11/2018

Exterior lighting

North elevation

2005046a 9/11/2018
Exterior finishes and site conditions
North elevation

2005046e 9/11/2018
Exterior lighting
North elevation

2005047a 9/11/2018
Exterior finishes at the north main entrance
North elevation

2005047e 9/11/2018
Exterior lighting
North elevation

2005048a 9/11/2018
Exterior finishes at the child care main entrance
North elevation

2005048e 9/11/2018
Exterior lighting
East elevation

2005049a 9/11/2018

Exterior finishes and site conditions

East elevation

2005049e 9/11/2018

Exterior lighting

East elevation

2005050a 9/11/2018

Child care play yard enclosure

West elevation

2005050e 9/11/2018

Exterior lighting

East elevation

2005051a 9/11/2018

Exterior plaza above the underground parking garage

South elevation

2005051e 9/11/2018

Exterior lighting

North elevation

2005052a 9/11/2018
Child care play yard interior fence
South elevation

2005053a 9/11/2018
Child care play yard
South elevation

2005054a 9/11/2018
Exterior finishes at the play yard
South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2005
Asset Name	Cascade Hall
Year Built or Last Energy Renovation	2014

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

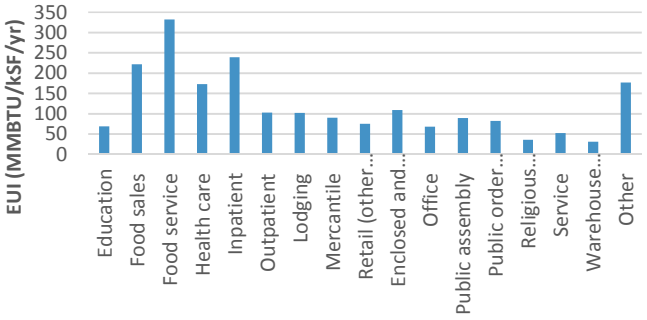
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

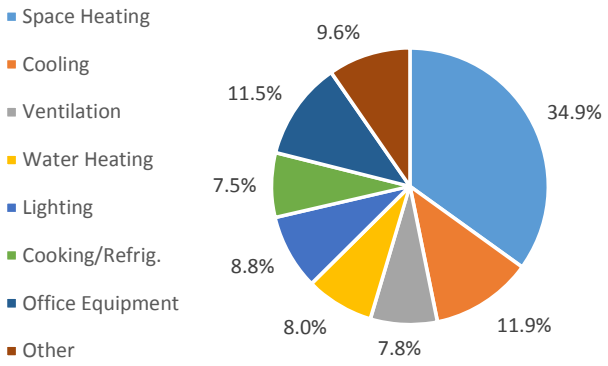


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	There are no ECM recommendations for this building	

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Jackson Hall

Asset 2010

Inspected September 11, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

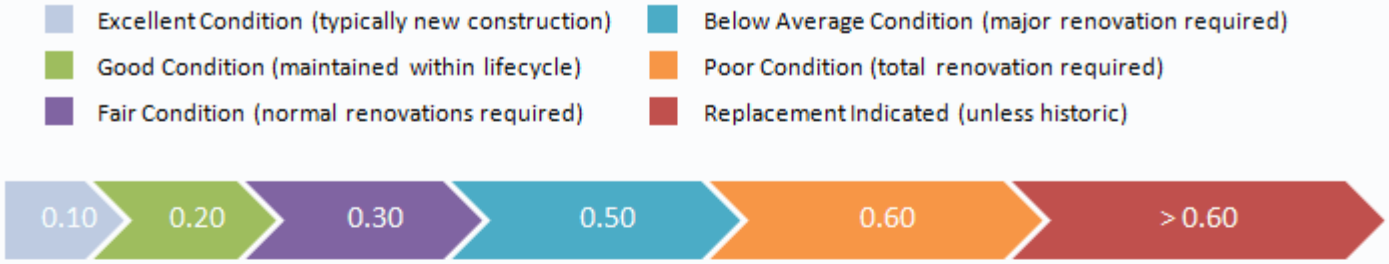
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

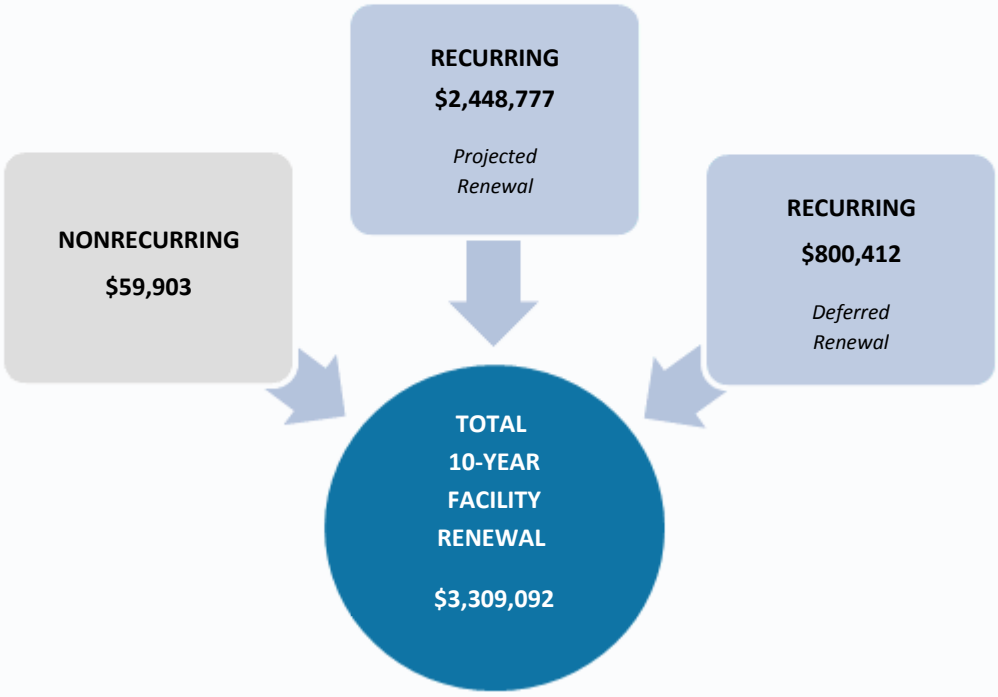
ASSET CODE	2010	**CURRENT REPLACEMENT VALUE**	$26,521,000
ASSET NAME	JACKSON HALL	**FACILITY CONDITION NEEDS INDEX**	0.12
ASSET USE	Laboratory	**FACILITY CONDITION INDEX**	0.03
YEAR BUILT	1985	**10-YEAR $/SF**	68.29
GSF	48,457		
INSPECTION DATE	09/11/2018		

FCNI Scale

The FCNI for this asset is **0.12**



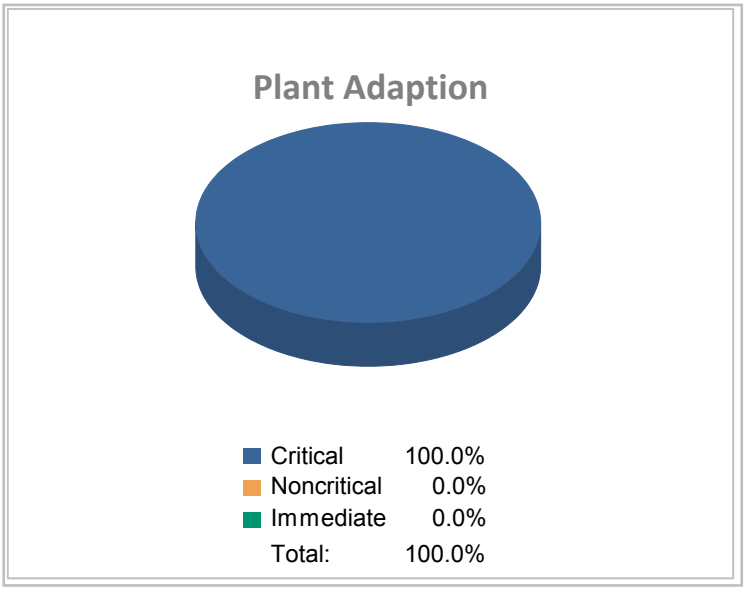
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

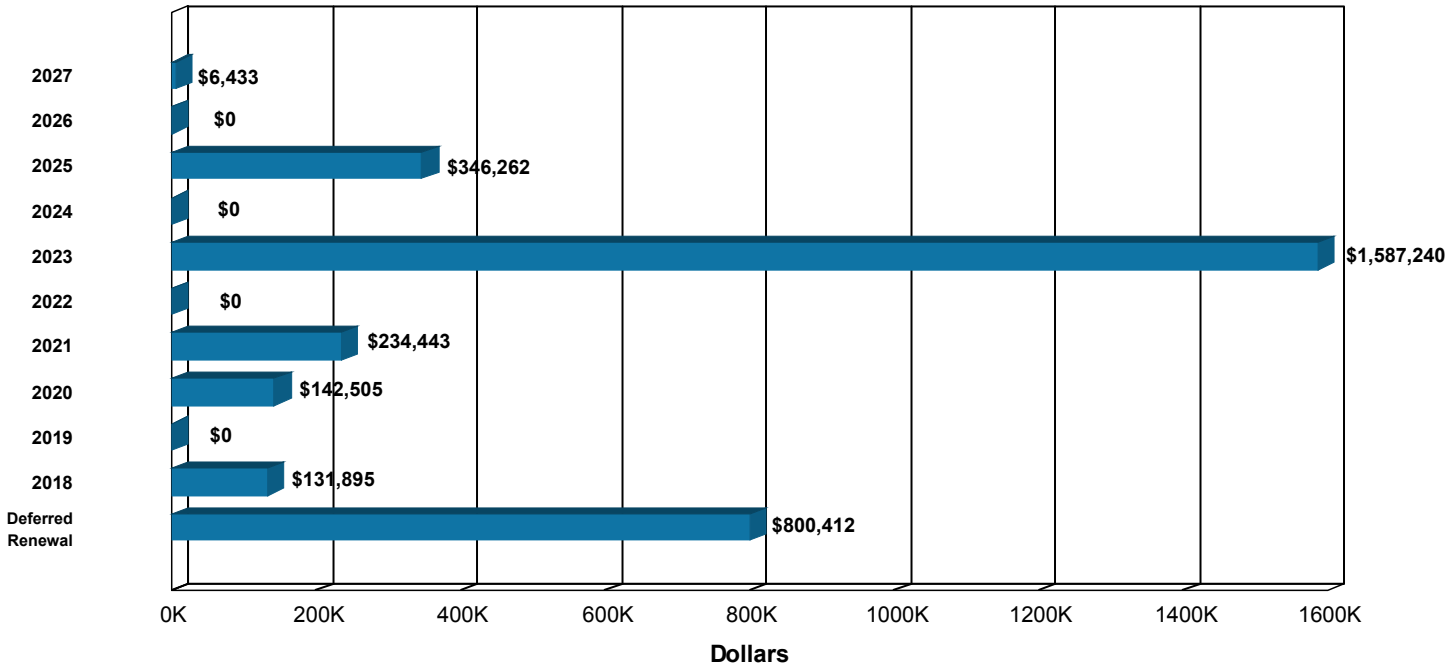
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$59,903**
3 - Noncritical	**$0**



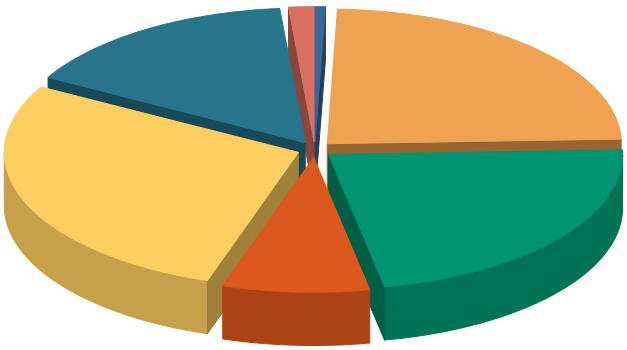
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$16,420	0%
Electrical	$794,329	24%
Exterior	$745,756	23%
Fire/Life Safety	$265,610	8%
Health	$0	0%
HVAC	$929,460	28%
Interiors	$513,262	16%
Plumbing	$44,256	1%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$3,309,092**	

ASSET SUMMARY

Jackson Hall was constructed on the Portland Community College, Cascade campus in 1985. This two-story science facility was remodeled and expanded in 2003, adding 17,500 square feet for six new science laboratories and four new classrooms and increased its size to its current 48,457 gross square feet. The building is located on the south side of North Jessup Street and the east side of North Kerby Avenue north of the Moriarty Arts and Humanities Building. The structure has flat roofs with exterior walls clad in brick and metal panels.

Information for this report was gathered during a site visit conducted on September 11, 2018.

Site

The site is flat and bordered on the north and west sides by concrete pedestrian city sidewalks and on the south and east sides by campus sidewalks. Parking is provided in nearby campus parking lots. Landscaping includes lawn areas, ornamental planting, and mature trees, all in good condition.

Exterior Structure

The major portions of the roof are asphaltic membrane systems with aluminized coating that are in average condition for their apparent age. However, they are expected to reach the end of their anticipated lifecycle in the next ten years and recommended for replacement. The stair on the west side of the building has a standing-seam metal roof which will be due for replacement within ten years. The exterior walls are brick veneer, metal panels, and a small amount of corrugated metal siding. The brick, the newer metal panels, and the corrugated siding are in good condition. The older metal panels should be inspected, refinished, and resealed as necessary.

Windows are metal-framed insulating glass storefront systems of varying ages. All of the systems appear to be in good condition but the older windows will reach the end of their normal lifecycle in the next ten years and should be reglazed as needed. The exterior doors are aluminum and glass storefront and flush, hollow-metal units. The storefront doors are in good condition, but the hollow-metal doors are deteriorating and should be replaced within the next ten years along with all of the exterior door hardware. The entrance canopy on the south side is a steel frame in good structural condition but should be repainted as a maintenance activity.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, sheet vinyl tile, and ceramic tile. The ceramic tile is in good condition, but all of the other floor finishes are nearing or beyond their normal lifecycle and should be replaced in the next ten years. The interior walls are painted or finished with ceramic tile. While the ceramic tile is in good condition, the painted walls should be repainted within the next few years. Ceilings are painted hard surfaces and suspended wood or acoustical tile systems, all of which are in

good condition. The interior doors as well as the laboratory, workroom, and break room casework, are also in good condition and no work is recommended.

Accessibility

This building was constructed in 1985 but substantially renovated and enlarged in 2003 and is in compliance with most current accessibility requirements. The entrances are at grade level and the main entrance has a powered door opener. The elevator has a compliant control panel, the door hardware and signage are compliant with accessibility standards, and the drinking fountains and restrooms provide the required accessible features. However, the exit from the west end of corridor 234 opens to a two-step rise to the sidewalk. It is recommended that a wheelchair ramp be installed at this location. Additionally, the level change in tiered classroom 102 lacks the required handrails. It is recommended that wall-mounted compliant handrails be installed.

Health

Emergency eyewash stations and combination emergency eyewash/shower stations are available in laboratories in the event of a mishap. The units appear to be properly maintained and in good condition.

Fire/Life Safety

The exit access pathways and exit doors are adequate in number and location and are clear of obstruction. The building has required exit signs in some locations, but egress pathways from a number of areas on both floors are not clearly designated by illuminated exit signs. It is recommended that new LED battery back-up exit signs be installed. Additionally, the exit sign at the end of the second floor corridor 234 points to a storage room door and could cause confusion in an evacuation. It is recommended that this sign be moved to the end of the hall. Emergency lighting is provided by select overhead light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system with the main panel in room 105. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to date to 2003. It will reach the end of its service life within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two Weil-McLain gas-fired boilers provide heating hot water. Installed in 2003, the boilers appear to be in adequate condition. Chilled water is provided by two air-cooled chillers installed at different times. The 2003 units appears to be well maintained and have remaining service life. The other Carrier unit is original and, based on industry standards, has reached the end of its service life. A circa 1985 Carrier, water-cooled chiller has also reached lifecycle depletion and is recommended for replacement. Pumps circulate the chilled and heating hot water. Additionally, an expansion tank serves the system. This equipment has been replaced over time and is in good condition with no recommendations.

An indoor air handling unit (AHU) and an outdoor AHU provide tempered air throughout. The units are equipped with chilled water coils and hot water coils. The indoor AHU utilizes a return fan. Distribution equipment consists of metal ductwork that has reheat coils and controls are a Honeywell digital application. The HVAC equipment was installed at different times and appears to be in adequate condition. However, some of the original equipment will reach the end of its service life within the scope of this report. Additionally, the controls should be scheduled for replacement. Cooling is also provided by two ductless split systems in the IT rooms that are charged with R410A DX refrigerant. Installed in 2015, the split systems have substantial remaining service life.

Facility exhaust is provided by rooftop utility set fans, rooftop centrifugal fans, and inline centrifugal fans. The fans serve restrooms, mechanical spaces, electrical spaces, and fume hoods. They were installed at different times and all of the remaining original equipment has reached lifecycle depletion. The newer fans should continue to serve the facility over the next ten years. Additionally, fume hoods installed in 2003 have remaining service life beyond the scope of this report.

Electrical

Power is supplied to the facility at 120/208 volts via underground utilities. The power energizes two main switchboards. The Challenger unit was manufactured in 1985 and has a capacity rating of 1,600 amps. It will reach the end of its service life in the next ten years. A 1,600 amp Siemens switchboard installed in 2003 supplies the 120/208 power. It appears to be well maintained with no recommendations.

The electrical distribution system consists of panelboards which supply power at 120/208 volts. Circuits are then energized for mechanical, lighting, and general purpose loads. The original system appears to be well marked and has remaining service life.

The interior lighting consists of suspended, lay-in, and surface-mounted fixtures with acrylic, parabolic, or no lenses. The lighting is lamped with T8 fluorescent bulbs and additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be good condition and is estimated to date to 2003. Based on age, the system will reach the end of its normal lifecycle within the next ten years.

The exterior lighting consists of eave-mounted non-HID fixtures and wall-mounted HID fixtures with additional lighting provided by pole-mounted fixtures on the site and from adjacent facilities. Although

the inspection was performed during daylight, the exterior lighting appears to provide adequate coverage. However, the older lighting may need to be scheduled for replacement due to lifecycle depletion.

Emergency power is provided by a district source. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears well maintained and in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The VFDs serve the exhaust fans, pumps, and air handling units. They vary in age and some will reach the end of their service life within the scope of this report.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers on the water systems prevent cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems are in good condition and no issues were reported. However, the backflow preventers will reach the end of their service life within the scope of this report.

Domestic hot water is provided by two, A.O. Smith commercial-grade, gas-fired water heaters with heating capacities of 125 MBH each. There is also an A.O. Smith storage tank in the basement. Pumps and expansion tanks support the equipment. The domestic water heating equipment dates to 2003 and has remaining service life beyond the scope of this report.

The facility houses a medical air compressor and vacuum pump system to serve the needs of the laboratories. These systems were installed in 2003 and are in adequate condition. While the compressor will outlast the scope of this report, the vacuum systems may need to be considered for replacement due to age.

A simplex sump pump system serves the basement mechanical room in the event of a water mishap. The sump pump, where it could be viewed, is in adequate condition. However, based on its estimated age it will reach lifecycle depletion in the next ten years.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and a utility sink. The kitchen sinks are near the end of their expected lifecycle and recommended for replacement. The single-level drinking fountain on the first floor should also be considered for replacement. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

This three-story facility has a hydraulic passenger elevator that serves two floors. The unit has a car capacity of 2,100 pounds and is controlled by a MCE nonproprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

September 11, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$FCNI = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$FCI = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	16,420	0	0	0	0	0	0	0	0	0	0	0	0	$16,420
EXTERIOR	0	0	0	79,460	0	0	0	0	0	449,650	0	216,646	0	0	$745,756
INTERIOR	0	0	0	312,788	131,895	0	31,622	0	0	36,957	0	0	0	0	$513,262
PLUMBING	0	0	0	2,694	0	0	0	0	0	41,562	0	0	0	0	$44,256
HVAC	0	0	0	405,469	0	0	110,883	0	0	413,108	0	0	0	0	$929,460
FIRE/LIFE SAFETY	0	43,483	0	0	0	0	0	222,127	0	0	0	0	0	0	$265,610
ELECTRICAL	0	0	0	0	0	0	0	12,316	0	645,963	0	129,616	0	6,433	$794,329
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$59,903	$0	$800,412	$131,895	$0	$142,505	$234,443	$0	$1,587,240	$0	$346,262	$0	$6,433	$3,309,092
TOTAL NONRECURRING PROJECT NEEDS			$59,903	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,249,189	

CURRENT REPLACEMENT VALUE	$26,521,000
FACILITY CONDITION NEEDS INDEX	0.12
FACILITY CONDITION INDEX	0.03

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
48,457	$3,309,092	$68.29

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$16,420	$0	$16,420
EXTERIOR	$0	$745,756	$745,756
INTERIOR	$0	$513,262	$513,262
PLUMBING	$0	$44,256	$44,256
HVAC	$0	$929,460	$929,460
FIRE/LIFE SAFETY	$43,483	$222,127	$265,610
ELECTRICAL	$0	$794,329	$794,329
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$59,903**	**$3,249,189**	**$3,309,092**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2010AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	B2030	2	Plant Adaption	13,374
2010FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	39,793
2010AC02	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	3,046
2010FS01	IMPROVE EGRESS PATHWAY DESIGNATION	D5090	2	Plant Adaption	3,690
				TOTAL	**$59,903**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2010	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	1985			B2010	Deferred Renewal	67,590
2010	DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			B2030	Deferred Renewal	2,374
2010	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	Deferred Renewal	9,496
2010	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	144,714
2010	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	Deferred Renewal	143,437
2010	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL			C3020	Deferred Renewal	24,638
2010	DF01	DRINKING FOUNTAIN, DUAL-LEVEL	ORIGINAL			D2010	Deferred Renewal	2,694
2010	CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	CARRIER	0000003034	ROOF	D3030	Deferred Renewal	106,042
2010	CH14	CHILLER - SPLIT RECIPROCATING OR SCROLL (35-75 TONS)	CH-1	0000003661	1	D3030	Deferred Renewal	114,865
2010	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000003685	ROOF	D3040	Deferred Renewal	3,773
2010	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000003686	ROOF	D3040	Deferred Renewal	3,773
2010	BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				D3060	Deferred Renewal	117,771
2010	BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				D3060	Deferred Renewal	59,245
2010	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2018	131,895
2010	DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIG NONRATED			C1020	2020	14,305
2010	DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIG RATED			C1020	2020	17,317

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2010	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	PACE	0000003658	1	D3040	2020	97,601
2010	FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	AHU RF	0000003660	1	D3040	2020	13,282
2010	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2021	208,270
2010	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		105	D4030	2021	13,857
2010	VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	HAAKON	0000003688	ROOF	D5010	2021	12,316
2010	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			B2030	2023	13,541
2010	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			B2030	2023	13,541
2010	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2023	422,568
2010	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2003 INSTALL			C3020	2023	36,957
2010	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2023	2,318
2010	BF01	BACKFLOW PREVENTER (<=1 INCH)			2	D2020	2023	1,006
2010	BF01	BACKFLOW PREVENTER (<=1 INCH)			2	D2020	2023	1,006
2010	BF02	BACKFLOW PREVENTER (1-2 INCHES)		0000003708	2	D2020	2023	2,235
2010	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			2	D2030	2023	710
2010	PG07	VACUUM PUMP - ROTARY VANE (>4<=6 HP)	0000003664		1	D2090	2023	17,144
2010	PG07	VACUUM PUMP - ROTARY VANE (>4<=6 HP)	0000003665		1	D2090	2023	17,144
2010	BA09	HVAC CONTROLS - TERMINAL ASSEMBLIES - LABORATORY, WET				D3060	2023	413,108

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2010	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2023	2,034
2010	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT		ROOF	D5020	2023	4,068
2010	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT			D5020	2023	772
2010	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2023	12,514
2010	LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET				D5020	2023	570,934
2010	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2023	55,641
2010	WN05	GLASS, STOREFRONT	1985			B2010	2025	211,778
2010	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				B2030	2025	4,013
2010	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM				B3010	2025	854
2010	SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP-1	0000003098	4	D5010	2025	129,616
2010	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU SF	0000003657	1	D5010	2027	6,433
							TOTAL	**$3,249,189**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2010FS01	IMPROVE EGRESS PATHWAY DESIGNATION	2	$3,690
2	2010FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$39,793
3	2010AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	2	$13,374
4	2010AC02	AUDITORIUM ACCESSIBILITY UPGRADES	2	$3,046
		TOTAL FOR PLANT ADAPTION		**$59,903**
		GRAND TOTAL:		**$59,903**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	2010AC01	2	Plant Adaption	BUILDING ENTRY ACCESSIBILITY UPGRADES	$13,374
4	2010AC02	2	Plant Adaption	AUDITORIUM ACCESSIBILITY UPGRADES	$3,046
				TOTAL FOR ACCESSIBILITY	**$16,420**
1	2010FS01	2	Plant Adaption	IMPROVE EGRESS PATHWAY DESIGNATION	$3,690
2	2010FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$39,793
				TOTAL FOR FIRE/LIFE SAFETY	**$43,483**
				GRAND TOTAL:	**$59,903**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

IMPROVE EGRESS PATHWAY DESIGNATION

Project Number:	2010FS01	**Category Code:** FS1A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	12/19/2018	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Not Applicable	Building-wide: Floor(s) 1,2
IBC	1011		

Description

The egress pathways from a number of areas on both floors are not clearly designated by exit signs. It is recommended that new LED-type battery backup exit signs be installed. The exit sign at the end of the second floor corridor 234 points to a storage room door and could cause confusion in an evacuation. It is recommended that this sign be moved to the end of the hall.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new battery pack LED exit signs, including all connections and extension of power	SF	24,000	$0.03	$720	$0.08	$1,920	$2,640
			Base Material/Labor Costs	**$720**		**$1,920**	
			Indexed Material/Labor Costs	**$716**		**$1,935**	**$2,651**
					Construction Mark Up at 20.0%		**$530**
					Original Construction Cost		**$3,181**
Date of Original Estimate: 12/19/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$3,181**
					Professional Fees at 16.0%		**$509**
					TOTAL PROJECT COST		**$3,690**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	2010FS02	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/19/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	36	$304	$10,944	$488	$17,568	$28,512
Base Material/Labor Costs				**$10,944**		**$17,568**	
Indexed Material/Labor Costs				**$10,878**		**$17,709**	**$28,587**
Construction Mark Up at 20.0%							**$5,717**
Original Construction Cost							**$34,304**
Date of Original Estimate: 12/19/2018						**Inflation**	**$0**
Current Year Construction Cost							**$34,304**
Professional Fees at 16.0%							**$5,489**
TOTAL PROJECT COST							**$39,793**

All costs shown as Present Value

BUILDING ENTRY ACCESSIBILITY UPGRADES

Project Number:	2010AC01	**Category Code:** AC2A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	12/19/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 405, 505	Not Applicable	Undefined: Floor(s) 1

Description

Current accessibility legislation requires that building entrances be wheelchair accessible. The exit from the west end of corridor 234 opens to a two-step rise to the sidewalk level. It is recommended that a wheelchair ramp be installed at this location including the installation of compliant handrails.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair ramp construction, including handrails	VFT	2	$2,547	$5,093	$2,255	$4,509	$9,602
			Base Material/Labor Costs	**$5,093**		**$4,509**	
			Indexed Material/Labor Costs	**$5,062**		**$4,546**	**$9,608**
						Construction Mark Up at 20.0%	**$1,922**
						Original Construction Cost	**$11,530**
Date of Original Estimate: 12/19/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$11,530**
						Professional Fees at 16.0%	**$1,845**
						TOTAL PROJECT COST	**$13,374**

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	2010AC02	**Category Code:** AC3B	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/19/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Room Only: Floor(s) 1
IBC	1028.13		

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The level change in tiered classroom 102 lacks the required handrails. It is recommended that wall-mounted compliant handrails be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	20	$64.33	$1,287	$45.09	$902	$2,188
Base Material/Labor Costs				**$1,287**		**$902**	
Indexed Material/Labor Costs				**$1,279**		**$909**	**$2,188**
Construction Mark Up at 20.0%							**$438**
Original Construction Cost							**$2,625**
Date of Original Estimate: 12/19/2018						**Inflation**	**$0**
Current Year Construction Cost							**$2,625**
Professional Fees at 16.0%							**$420**
TOTAL PROJECT COST							**$3,046**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	MECH SCREEN		ROOF	3,600	SF	1.00	$48,980	2003	30		2033
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	1985			2,860	SF	1.12	$67,590	1985	25	7	DR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	2003			1,910	SF	1.12	$45,139	2003	25		2028
WN05	GLASS, STOREFRONT	1985			1,680	SF	1.00	$211,778	1985	40		2025
WN05	GLASS, STOREFRONT	2003			1,120	SF	1.00	$141,186	2003	40		2043
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				8	LEAF	1.00	$24,178	2003	25		2028
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				2	LEAF	1.00	$4,013	1985	40		2025
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			2	EA	1.00	$13,541	2003	20		2023
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			2	EA	1.00	$13,541	2003	20		2023
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			8	EA	1.00	$9,496	2003	12	2	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			2	EA	1.00	$2,374	1985	12	20	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				24,229	SF	1.00	$422,568	2003	20		2023
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM				50	SF	1.00	$854	1985	40		2025
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	ORIGINAL			19	LEAF	1.00	$42,017	1985	60		2045
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	2003			20	LEAF	1.00	$44,229	2003	60		2063

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIGINAL			23	LEAF	1.00	$84,376	1985	60		2045
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	2003			18	LEAF	1.00	$66,034	2003	60		2063
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			12	LEAF	1.00	$44,022	2003	60		2063
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIG NONRATED			19	EA	1.00	$14,305	1985	35		2020
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2003 NONRATED			20	EA	1.00	$15,058	2003	35		2038
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIG RATED			23	EA	1.00	$17,317	1985	35		2020
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2003 RATED			18	EA	1.00	$13,552	2003	35		2038
DR26	DOOR PANIC HARDWARE, INTERIOR				12	EA	1.00	$14,244	2003	30		2033
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRM, BRK RM	125	LF	1.00	$70,110	2003	30		2033
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP				12,000	SF	0.60	$1,113,031	2003	40		2043
IW01	WALL FINISH - APPLIED, STANDARD				51,850	SF	1.00	$144,714	2003	12	2	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				2,730	SF	1.00	$110,569	2003	60		2063
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				12,040	SF	1.00	$143,437	2003	12	2	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL			3,580	SF	1.00	$24,638	1985	20	12	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2003 INSTALL			5,370	SF	1.00	$36,957	2003	20		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF04	FLOORING - VINYL SHEET, STANDARD				11,700	SF	1.00	$131,895	2003	15		2018
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				1,720	SF	1.00	$60,659	2003	40		2043
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				29,240	SF	1.00	$325,446	1985	45		2030
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				5,160	SF	1.00	$14,402	2003	24	3	2030
IC07	CEILING FINISH - SUSPENDED ARCHITECTURAL	WOOD PANELS		233	400	SF	1.00	$46,567	2003	60		2063
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MCE	0000004390	6	1	EA	1.00	$257,984	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	2003			1	EA	1.00	$2,694	2003	25		2028
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	ORIGINAL			1	EA	1.00	$2,694	1985	25	7	DR
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	SINGLE LEVEL		1ST FLOOR	1	EA	1.00	$2,694	2003	25		2028
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				13	EA	1.00	$17,565	2003	35		2038
FX04	PLUMBING FIXTURE - SINK, KITCHEN				3	EA	1.00	$2,318	2003	20		2023
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				1	EA	1.00	$1,664	1985	50		2035
FX10	PLUMBING FIXTURE - URINAL				2	EA	1.00	$2,157	2003	35		2038
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				12	EA	1.00	$20,340	2003	35		2038
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			115	1	EA	1.00	$1,080	2003	35		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000003059	219	1	EA	1.00	$1,080	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003076	108	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003089	111	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH				1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH				1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003086	110	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003089	111	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003041	213	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003057	214	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003056	215	1	EA	1.00	$1,539	2003	35		2038
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH		0000003081	216	1	EA	1.00	$1,539	2003	35		2038
BF01	BACKFLOW PREVENTER (<=1 INCH)			2	1	EA	1.00	$1,006	2003	20		2023
BF01	BACKFLOW PREVENTER (<=1 INCH)			2	1	EA	1.00	$1,006	2003	20		2023
BF02	BACKFLOW PREVENTER (1-2 INCHES)		0000003708	2	1	EA	1.00	$2,235	2003	20		2023
PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET		0000003044	222	48,457	SF	1.00	$783,771	1985	50		2035

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
TK04	WATER TANK (275-1,649 GAL)	A.O. SMITH	0000003662	0000003662	400	GAL	1.00	$20,929	2003	30		2033
TK06	EXPANSION TANK, STL PT (<20 GAL)		0000003653	1	10	GAL	1.00	$1,008	2003	30		2033
TK06	EXPANSION TANK, STL PT (<20 GAL)		0000003654	1	10	GAL	1.00	$1,008	2003	30		2033
WH02	WATER HEATER - COMMERCIAL, GAS (<87-168 MBH INPUT)	A.O. SMITH	0000003655	1	125	MBH	1.00	$11,667	2003	25		2028
WH02	WATER HEATER - COMMERCIAL, GAS (<87-168 MBH INPUT)	A.O. SMITH	0000003656	1	125	MBH	1.00	$11,667	2003	25		2028
PD09	DRAIN PIPING SYSTEM - LABORATORY, WET		0000003083	217	48,457	SF	1.00	$1,174,985	1985	60		2045
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			2	1	EA	1.00	$710	2003	20		2023
PG03	AIR COMPRESSOR - MEDICAL/LABORATORY PCKG (20-40 HP), WITH DRYER			1	30	HP	1.00	$38,853	2003	25		2028
PG07	VACUUM PUMP - ROTARY VANE (>4<=6 HP)	0000003664		1	5	HP	1.00	$17,144	2003	20		2023
PG07	VACUUM PUMP - ROTARY VANE (>4<=6 HP)	0000003665		1	5	HP	1.00	$17,144	2003	20		2023
BL28	BOILER - GAS (2400-3500 MBH)	B-1	0000003676	8	2,713	MBH	1.00	$68,708	2003	28		2031
BL28	BOILER - GAS (2400-3500 MBH)	B-2	0000003679	2	2,713	MBH	1.00	$68,708	2003	28		2031
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	TRANE	0000003689	ROOF	140	TON	1.00	$176,736	2003	30		2033
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	CARRIER	0000003034	ROOF	84	TON	1.00	$106,042	1985	30	2	DR
CH14	CHILLER - SPLIT RECIPROCATING OR SCROLL (35-75 TONS)	CH-1	0000003661	1	70	TON	1.00	$114,865	1985	30	2	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	MITSUBISHI ELECTRIC	0000005665	ROOF	2	TON	1.00	$6,460	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	MITSUBISHI ELECTRIC	0000005666	ROOF	2	TON	1.00	$6,460	2015	20		2035
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	PACE	0000003658	1	15	HP	1.00	$97,601	1985	35		2020
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	HAAKON	0000003687	ROOF	40	HP	1.00	$609,543	2003	25		2028
FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	AHU RF	0000003660	1	7	HP	1.00	$13,282	1985	35		2020
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000003685	ROOF	1	EA	1.00	$3,773	1985	25	7	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000003686	ROOF	1	EA	1.00	$3,773	1985	25	7	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	GREENHECK	0000006334	ROOF	1	EA	1.00	$3,773	2015	25		2040
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	MAF-1	0000003678	1	1	HP	1.00	$1,321	2003	35		2038
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)			2	1	HP	1.00	$1,321	2003	35		2038
FN36	FAN - UTILITY SET, 1/4" SP (17-27 HP)	EF-2A	0000003696	ROOF	20	HP	1.00	$25,701	2003	40		2043
FN36	FAN - UTILITY SET, 1/4" SP (17-27 HP)	EF-2B	0000003697	ROOF	20	HP	1.00	$25,701	2003	40		2043
HD01	HOOD, FUME		0000003077	108	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003079	109	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003060	219	6	LF	1.00	$14,641	2003	35		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HD01	HOOD, FUME		0000003046	222	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000005869	222B	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003087	110	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003047	214	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003048	214	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003049	214	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003050	214	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003051	214	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003052	214	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003088	110	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003090	111	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003042	213	4	LF	1.00	$9,761	2003	35		2038
HD01	HOOD, FUME		0000003054	215	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003082	216	6	LF	1.00	$14,641	2003	35		2038
HD01	HOOD, FUME		0000003084	217	6	LF	1.00	$14,641	2003	35		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET				48,457	SF	1.00	$4,133,542	1985	45		2030
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006879	1	1	HP	0.50	$846	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006880	1	1	HP	0.50	$846	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000003680	2	5	HP	1.00	$8,463	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000003681	2	5	HP	1.00	$8,463	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-1	0000009490	1	2	HP	1.00	$3,385	2015	30		2045
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-2	0000003670	1	7	HP	1.00	$11,848	2003	30		2033
TK22	EXPANSION TANK, STL PT (27-49 GAL)	ET-2	0000003677	8	40	GAL	1.00	$2,221	2003	30		2033
BA09	HVAC CONTROLS - TERMINAL ASSEMBLIES - LABORATORY, WET				48,457	SF	1.00	$413,108	2003	20		2023
BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				48,457	SF	1.00	$117,771	2003	10	4	DR
BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				48,457	SF	1.00	$59,245	2003	10	4	DR
FS01	FIRE SPRINKLER SYSTEM - WET				48,457	SF	1.00	$655,557	1985	80		2065
FA01	FIRE ALARM SYSTEM - DEVICES				48,457	SF	1.00	$208,270	2003	18		2021
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		105	1	EA	1.00	$13,857	2003	18		2021
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		105	1	EA	1.00	$13,857	2010	18		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET				48,457	SF	1.00	$1,353,858	1985	50		2035
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP-1	0000003098	4	1,600	AMP	1.00	$129,616	1985	40		2025
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP-2	0000003093	4	1,600	AMP	1.00	$129,616	2003	40		2043
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP	0000003682	2	5	HP	1.00	$3,633	2016	15		2031
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP	0000003683	2	5	HP	1.00	$3,633	2016	15		2031
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU SF	0000003657	1	15	HP	1.00	$6,433	2011	16		2027
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	EF-2A	0000003695	ROOF	20	HP	1.00	$7,904	2018	16		2034
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	EF-2B	0000003694	ROOF	20	HP	1.00	$7,904	2018	16		2034
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	HAAKON	0000003688	ROOF	40	HP	1.00	$12,316	2003	18		2021
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT		ROOF	8	EA	1.00	$4,068	2003	20		2023
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			4	EA	1.00	$2,034	2003	20		2023
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT			1	EA	1.00	$772	2003	20		2023
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	10	EA	1.00	$19,476	2003	40		2043
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	10	EA	1.00	$12,514	2003	20		2023
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET				48,457	SF	1.00	$570,934	2003	20		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				24,228	SF	1.00	$55,641	2003	20		2023
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	ATS-1 JH	0000005231	4	125	AMP	1.00	$3,412	2015	25		2040
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	ATS-2 JH	0000005230	4	125	AMP	1.00	$3,412	2015	25		2040
							Grand Total:	$15,564,490				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, PANEL JOINT RESTORATION	1985	2,860	SF	$67,590	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	8	EA	$9,496	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS	2	EA	$2,374	DR
C3010	WALL FINISH - APPLIED, STANDARD		51,850	SF	$144,714	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		12,040	SF	$143,437	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL	3,580	SF	$24,638	DR
D2010	DRINKING FOUNTAIN, DUAL-LEVEL	ORIGINAL	1	EA	$2,694	DR
D3030	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	CARRIER	84	TON	$106,042	DR
D3030	CHILLER - SPLIT RECIPROCATING OR SCROLL (35-75 TONS)	CH-1	70	TON	$114,865	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	1	EA	$3,773	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY		48,457	SF	$59,245	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY		48,457	SF	$117,771	DR
		TOTAL DEFERRED RENEWAL COST			$800,412	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - VINYL SHEET, STANDARD		11,700	SF	$131,895	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$131,895**	

No Projected Component Replacement Cost for Asset No. 2010 for 2019

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	PACE	15	HP	$103,545	2020
D3040	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	AHU RF	7	HP	$14,091	2020
C1020	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIG NONRATED	19	EA	$15,176	2020
C1020	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIG RATED	23	EA	$18,371	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$151,183**	

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	HAAKON	40	HP	$13,458	2021
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$15,142	2021
D4030	FIRE ALARM SYSTEM - DEVICES		48,457	SF	$227,582	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$256,182**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2010 for 2022

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2090	VACUUM PUMP - ROTARY VANE (>4<=6 HP)	0000003664	5	HP	$19,874	2023
D2090	VACUUM PUMP - ROTARY VANE (>4<=6 HP)	0000003665	5	HP	$19,874	2023
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET		48,457	SF	$661,869	2023
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		24,228	SF	$64,503	2023
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	8	EA	$4,716	2023
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT	1	EA	$895	2023
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	4	EA	$2,358	2023
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		10	EA	$14,508	2023
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - LABORATORY, WET		48,457	SF	$478,905	2023
D2020	BACKFLOW PREVENTER (1-2 INCHES)		1	EA	$2,591	2023
D2020	BACKFLOW PREVENTER (<=1 INCH)		1	EA	$1,166	2023
D2020	BACKFLOW PREVENTER (<=1 INCH)		1	EA	$1,166	2023
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)		1	EA	$823	2023
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		24,229	SF	$489,873	2023
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	2003 INSTALL	5,370	SF	$42,843	2023
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR	2	EA	$15,697	2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR	2	EA	$15,697	2023
D2010	PLUMBING FIXTURE - SINK, KITCHEN		3	EA	$2,687	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,840,046**	

No Projected Component Replacement Cost for Asset No. 2010 for 2024

2025

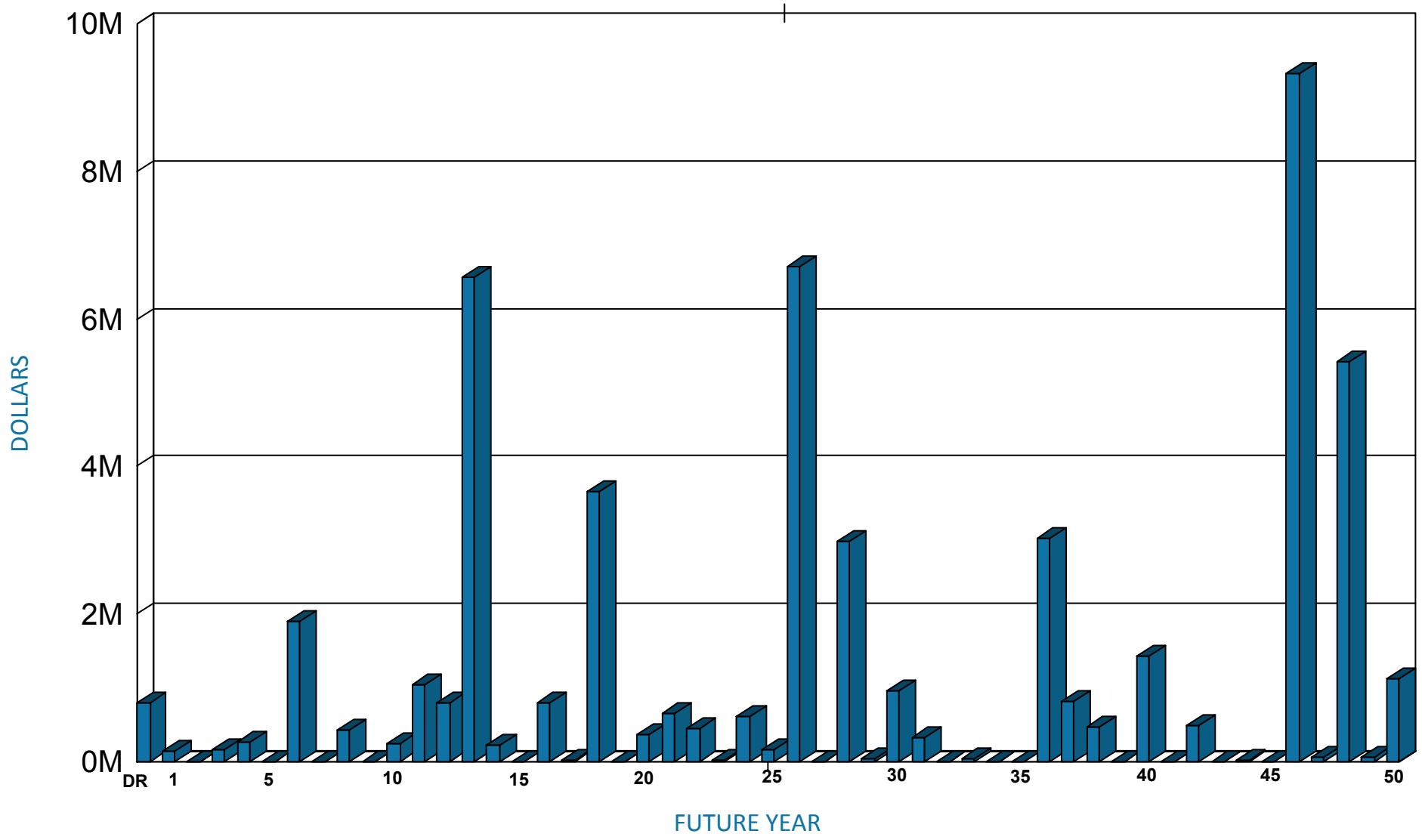
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP-1	1,600	AMP	$159,411	2025
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM		50	SF	$1,051	2025
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL		2	LEAF	$4,936	2025
B2010	GLASS, STOREFRONT	1985	1,680	SF	$260,461	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$425,858**	

No Projected Component Replacement Cost for Asset No. 2010 for 2026

2027

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU SF	15	HP	$8,394	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$8,394**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



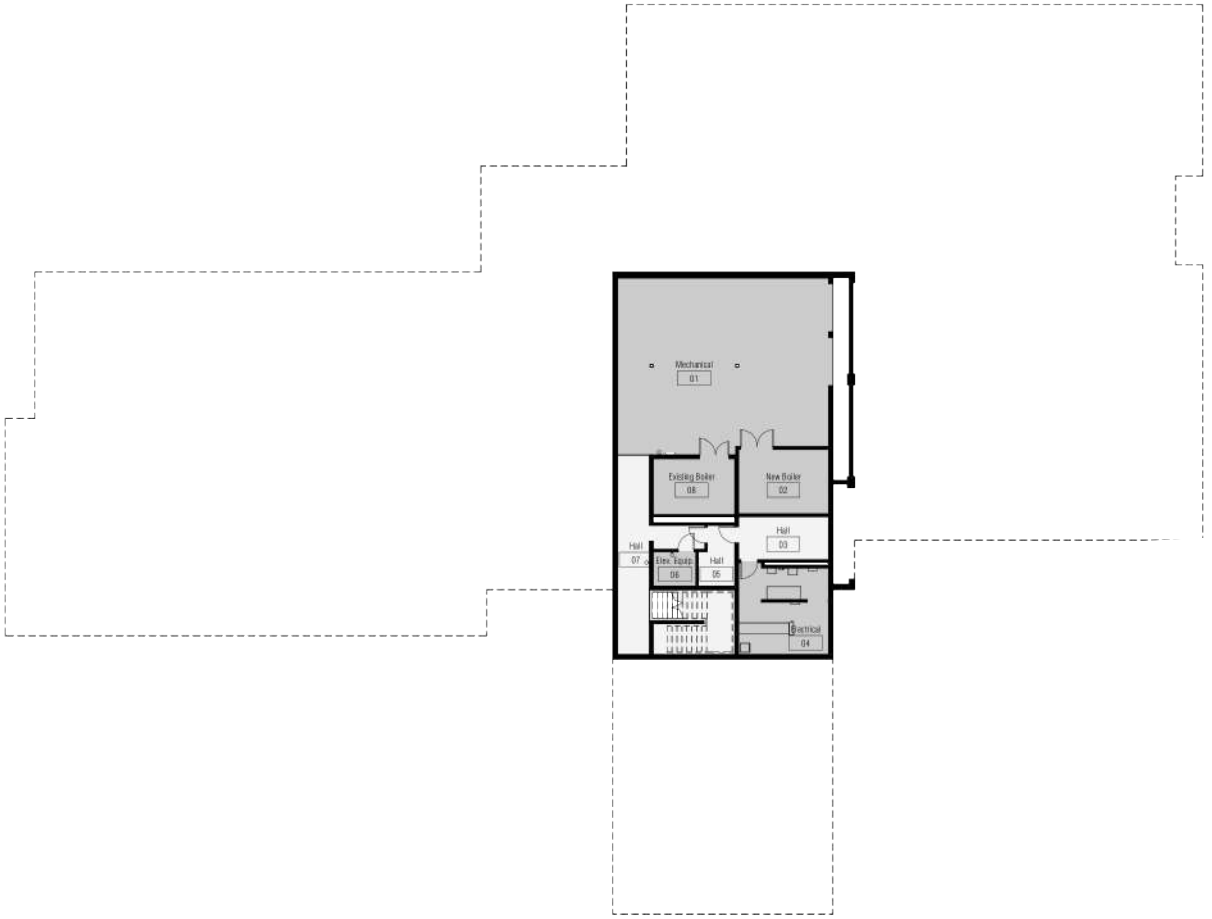
Average Annual Renewal Cost per SF $9.81

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



JACKSON
HALL

BLDG NO. 2010

ISES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

BASEMENT
FLOOR
PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE

AC01 FS01

N

JACKSON HALL

BLDG NO. 2010

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

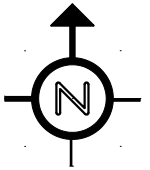
Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

ROOF
FS02



JACKSON HALL

BLDG NO. 2010

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

2010001a 9/11/2018
Exterior finishes and site conditions at the south entrance
South elevation

2010001e 9/11/2018
Car operating panel
Elevator cab

2010002a 9/11/2018
Exterior finishes and site conditions at the south entrance
South elevation

2010002e 9/11/2018
Exhaust fans
Roof

2010003a 9/11/2018
Entrance canopy in need of paint
South elevation

2010003e 9/11/2018
VFDs
Roof

2010004a 9/11/2018

Exterior finishes and site

East elevation

2010004e 9/11/2018

Air-cooled chiller

Roof

2010005a 9/11/2018

Classroom exits and site

East elevation

2010005e 9/11/2018

Rooftop package unit

Roof

2010006a 9/11/2018

Exterior finishes

East elevation

2010006e 9/11/2018

Exhaust fans

Roof

2010007a 9/11/2018

Exterior finishes and site conditions

North elevation

2010007e 9/11/2018

Exhaust fan

Roof

2010008a 9/11/2018

Exterior finishes and site conditions at the north entrance

North elevation

2010008e 9/11/2018

Condensing units

Roof

2010009a 9/11/2018

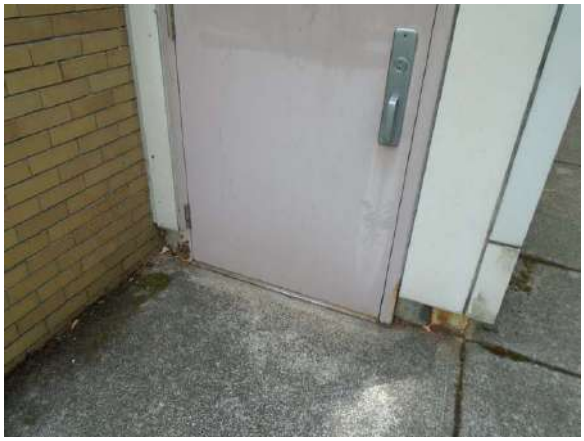
Exit stair structure

West elevation

2010009e 9/11/2018

Rooftop package unit

Roof



2010010a 9/11/2018

Detail at the stair exit

West elevation

2010010e 9/11/2018

Interior lighting

Second floor, room 213

2010011a 9/11/2018

Detail at the metal panel finish

West elevation

2010011e 9/11/2018

Drain piping

Second floor, room 213

2010012a 9/11/2018

Exit door and steps without handrails

West elevation

2010012e 9/11/2018

Emergency shower/eyewash station

Second floor, room 213

2010013a 9/11/2018

Compliant elevator control panel

Elevator

2010013e 9/11/2018

Fume hood

Second floor, room 213

2010014a 9/11/2018

Roof membrane and low parapet without fall protection

Roof

2010014e 9/11/2018

Digital thermostat

Second floor, room 213

2010015a 9/11/2018

Roof drain and overflow scupper

Roof

2010015e 9/11/2018

Strobe and interior lighting

Second floor, women's restroom

2010016a 9/11/2018

Mechanical equipment screen wall

Roof

2010016e 9/11/2018

Evaporator

Second floor, room 211

2010017a 9/11/2018

Typical roof condition

Roof

2010017e 9/11/2018

Interior lighting

Second floor, corridor

2010018a 9/11/2018

Roof access

Roof

2010018e 9/11/2018

Fume hoods

Second floor, room 214

2010019a 9/11/2018

Lab area casework

Room 213

2010019e 9/11/2018

Panelboard

First floor, room 100

2010020a 9/11/2018

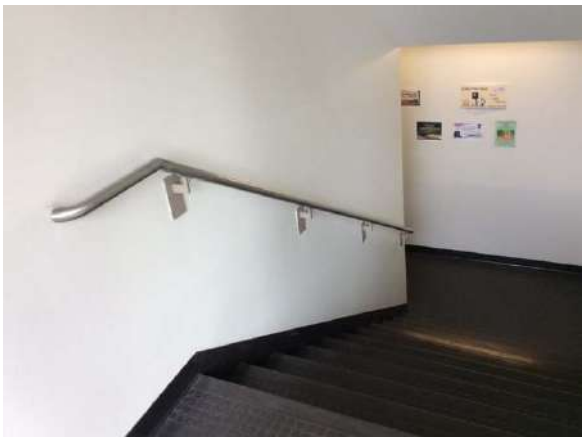
Lab area casework

Room 213

2010020e 9/11/2018

Wheelock panel

First floor, room 105



2010021a 9/11/2018

Stair with compliant handrails

Stair 2-2

2010021e 9/11/2018

Fire alarm panel

First floor, room 105

2010022a 9/11/2018

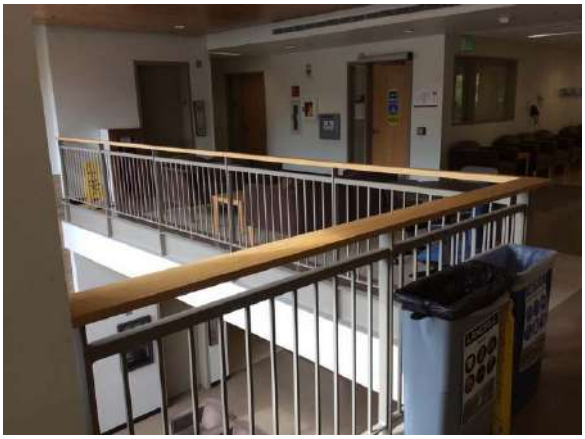
Typical corridor finishes

Corridor 233A

2010022e 9/11/2018

Evaporator

First floor, room 105



2010023a 9/11/2018

Entrance atrium guardrail

Lobby 233

2010023e 9/11/2018

Interior lighting

First floor, room 115

2010024a 9/11/2018

Lavatories, urinal, screen, and finishes

Room 238

2010024e 9/11/2018

Eyewash station

First floor, room 115

2010025a 9/11/2018

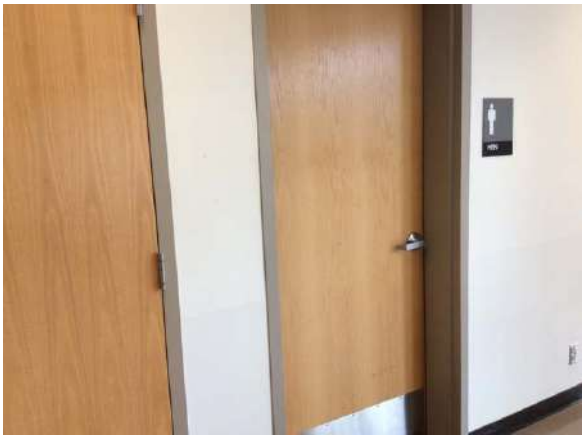
Accessible water closet and accessories

Room 238

2010025e 9/11/2018

Vacuum system

Basement, room 001



2010026a 9/11/2018

Restroom door and compliant signage

Lobby 233

2010026e 9/11/2018

Compressor and dryer

Basement, room 001

2010027a 9/11/2018

Utility sink

Room 237

2010027e 9/11/2018

Chiller

Basement, room 001

2010028a 9/11/2018

Lavatories and area finishes

Room 236

2010028e 9/11/2018

Air handling unit

Basement, room 001

2010029a 9/11/2018

Toilet partitions and finishes

Room 236

2010029e 9/11/2018

Fan section of AHU

Basement, room 001

2010030a 9/11/2018

Rating labels on typical fire-rated door

Lobby 233

2010030e 9/11/2018

Air handling unit

Basement, room 001

2010031a 9/11/2018

Lobby area finishes

Lobby 233

2010031e 9/11/2018

VFD

Basement, room 001

2010032a 9/11/2018

Lobby area finishes

Lobby 233

2010032e 9/11/2018

Expansion tank

Basement, room 001

2010033a 9/11/2018

Typical lab finishes

Room 214

2010033e 9/11/2018

Pump equipment

Basement, room 001

2010034a 9/11/2018

Lab casework and finishes

Room 214

2010034e 9/11/2018

Water heaters

Basement, room 001

2010035a 9/11/2018

Detail at the glazing system, 1989

Room 214

2010035e 9/11/2018

Expansion tanks

Basement, room 001

2010036a 9/11/2018

Typical ceiling system

Room 214

2010036e 9/11/2018

Panelboard

Basement, room 001

2010037a 9/11/2018

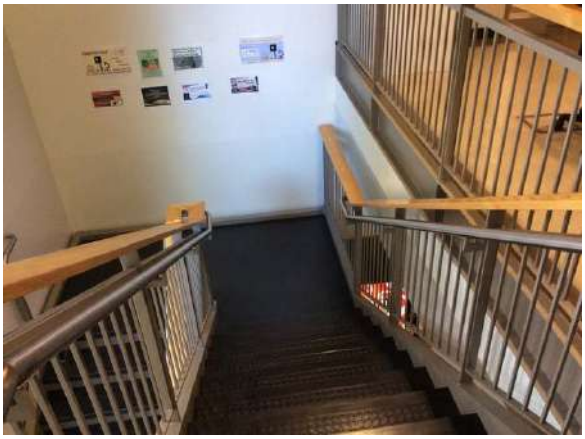
Accessible drinking fountains

Lobby 240

2010037e 9/11/2018

Pump equipment

Basement, room 001



2010038a 9/11/2018

Stair with compliant handrails

Stair S2-3

2010038e 9/11/2018

Boiler

Basement, room 008

2010039a 9/11/2018

Break area sink and casework

Room 208

2010039e 9/11/2018

ATS

Basement, room 004

2010040a 9/11/2018

Typical office area finishes

Room 208

2010040e 9/11/2018

Switchboard

Basement, room 004

2010041a 9/11/2018

Work area casework

Room 208

2010041e 9/11/2018

Switchboard

Basement, room 004

2010042a 9/11/2018

Exit stair finishes, handrails, door, and hardware

Stair S2-1

2010042e 9/11/2018

Panelboard

Basement, room 004

2010043a 9/11/2018

Typical corridor finishes

Corridor 234

2010043e 9/11/2018

ATS

Basement, room 004

2010044a 9/11/2018

Misplaced exit sign

Corridor 234

2010044e 9/11/2018

Elevator machine and controller

Basement, room 006

2010045a 9/11/2018

Tiered classroom without required handrails

Room 102

2010045e 9/11/2018

Pump equipment

Basement, room 002

2010046a 9/11/2018
Tiered classroom without required handrails
Room 102

2010046e 9/11/2018
Sump pump system
Basement, room 002

2010047a 9/11/2018
Classroom exit door and signage
Room 102

2010047e 9/11/2018
VFD
Basement, room 002

2010048a 9/11/2018
Casework and sinks
Room 101

2010048e 9/11/2018
Pump equipment
Basement, room 002

2010049a 9/11/2018

Work area casework

Room 103

2010049e 9/11/2018

Backflow preventers

Basement, room 002

2010050a 9/11/2018

Lab area finishes and casework

Room 100

2010050e 9/11/2018

Boiler

Basement, room 002

2010051a 9/11/2018

General classroom finishes

Room 107

2010051e 9/11/2018

Strobe and drain piping

Basement, room 007

2010052a 9/11/2018

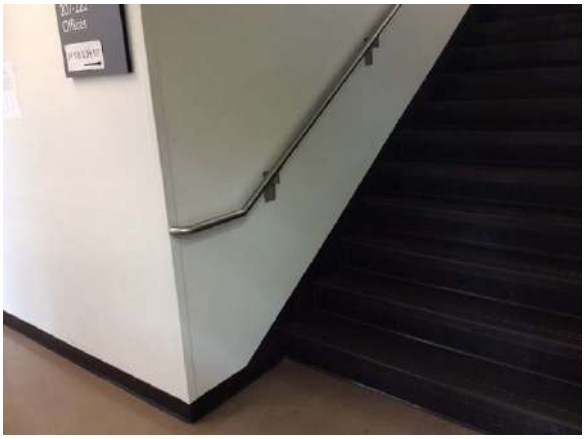
General classroom finishes

Room 107

2010052e 9/11/2018

Transformer

Site



2010053a 9/11/2018

Stair with compliant handrails

Stair S1-2

2010053e 9/11/2018

Exterior lighting

Site

2010054a 9/11/2018

Lavatories, urinal, and screen

Room 131

2010054e 9/11/2018

Exterior lighting

Site

2010055a 9/11/2018
Restroom doors with power door operators
Lobby 126

2010055e 9/11/2018
Exterior lighting
Site

2010056a 9/11/2018
Lab area casework and finishes
Room 110

2010056e 9/11/2018
Exterior lighting
North elevation

2010057a 9/11/2018
Accessible drinking fountains
Lobby 134

2010057e 9/11/2018
Exterior lighting
Site

2010058a 9/11/2018

Stair with compliant railings

Stair S1-3

2010058e 9/11/2018

Exterior lighting

West elevation

2010059a 9/11/2018

Damaged vinyl floor tile

Lobby 134

2010059e 9/11/2018

Exterior lighting

Site

2010060e 9/11/2018

Exterior lighting

South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2010
Asset Name	JACKSON HALL
Year Built or Last Energy Renovation	1985

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

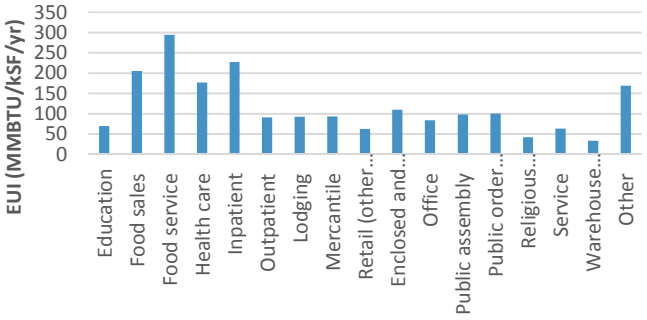
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Laboratory
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**169.2**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 118.4
Energy Efficient (consumes 10% to 30% less energy)	118.4 <= EUI <= 152.3
Similar (consumes within 10% less or 10% more energy)	152.3 < EUI < 186.1
Energy Inefficient (consumes 10% to 30% more energy)	186.1 <= EUI <= 220
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 220

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

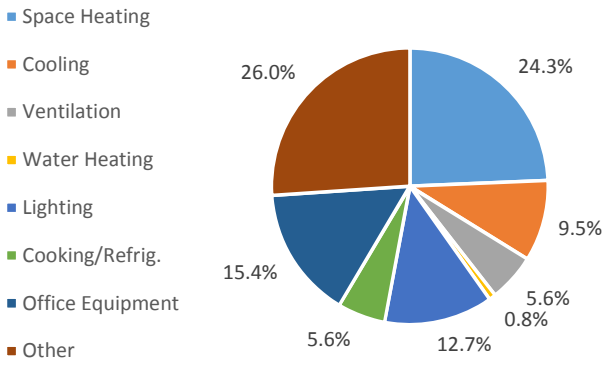


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LABORATORY	
Space Heating	24.3%
Cooling	9.5%
Ventilation	5.6%
Water Heating	0.8%
Lighting	12.7%
Cooking/Refrig.	5.6%
Office Equipment	15.4%
Other	26.0%
Total	100.0%

Figure 2. Energy End Use Profile: Laboratory



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Central Cooling	INSTALL AN ENERGY-EFFICIENT CHILLER. Energy-efficient chillers, including, but not limited to, magnetic bearing chillers, achieve higher efficiencies than conventional chillers. Research FEMP designated chillers to find the most energy-efficient options.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Library

Asset 2060

Inspected September 10, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

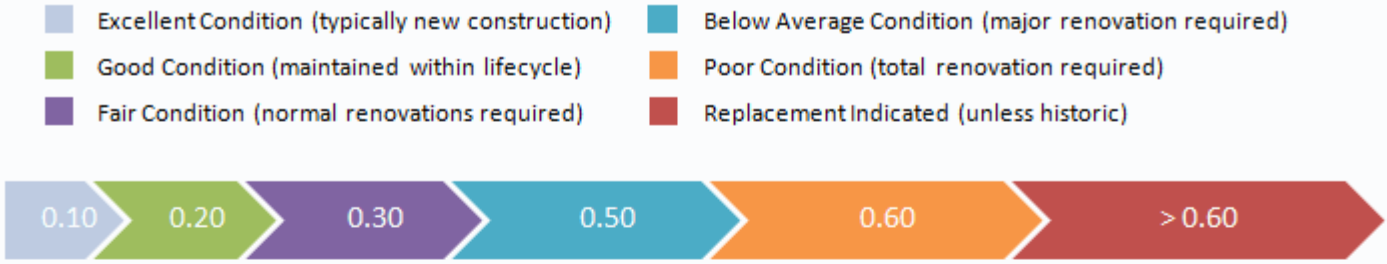
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

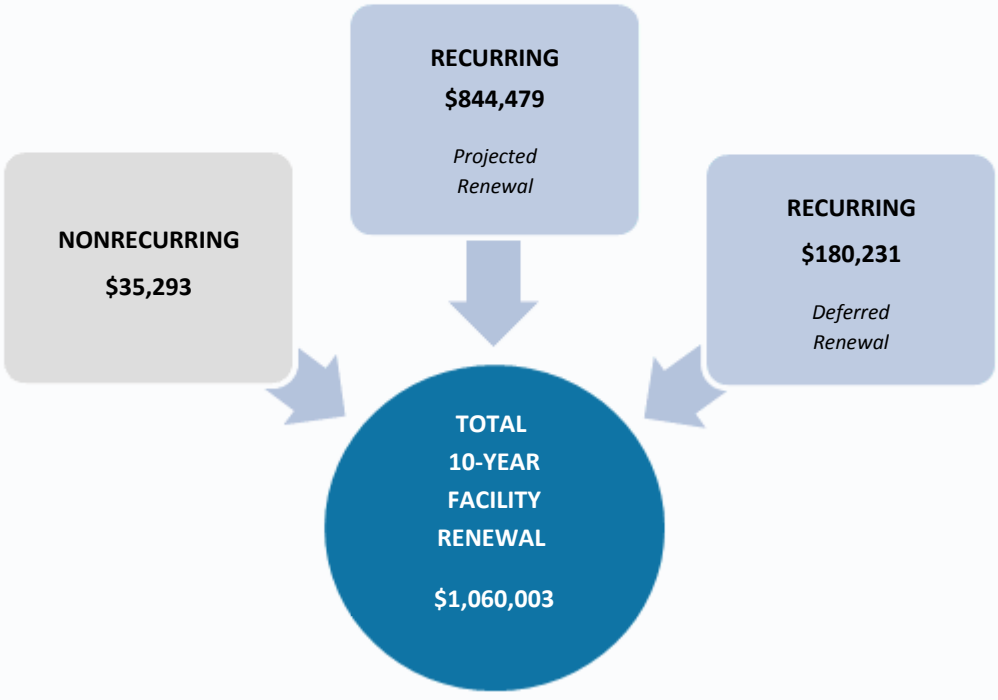
ASSET CODE	2060	**CURRENT REPLACEMENT VALUE**	$13,250,000
ASSET NAME	LIBRARY	**FACILITY CONDITION NEEDS INDEX**	0.08
ASSET USE	Library	**FACILITY CONDITION INDEX**	0.01
YEAR BUILT	1964	**10-YEAR $/SF**	30.78
GSF	34,441		
INSPECTION DATE	09/10/2018		

FCNI Scale

The FCNI for this asset is **0.08**



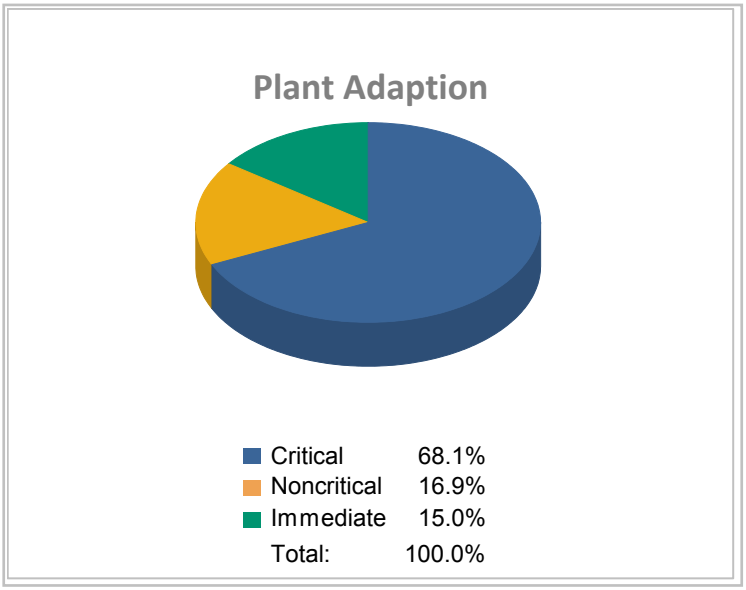
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

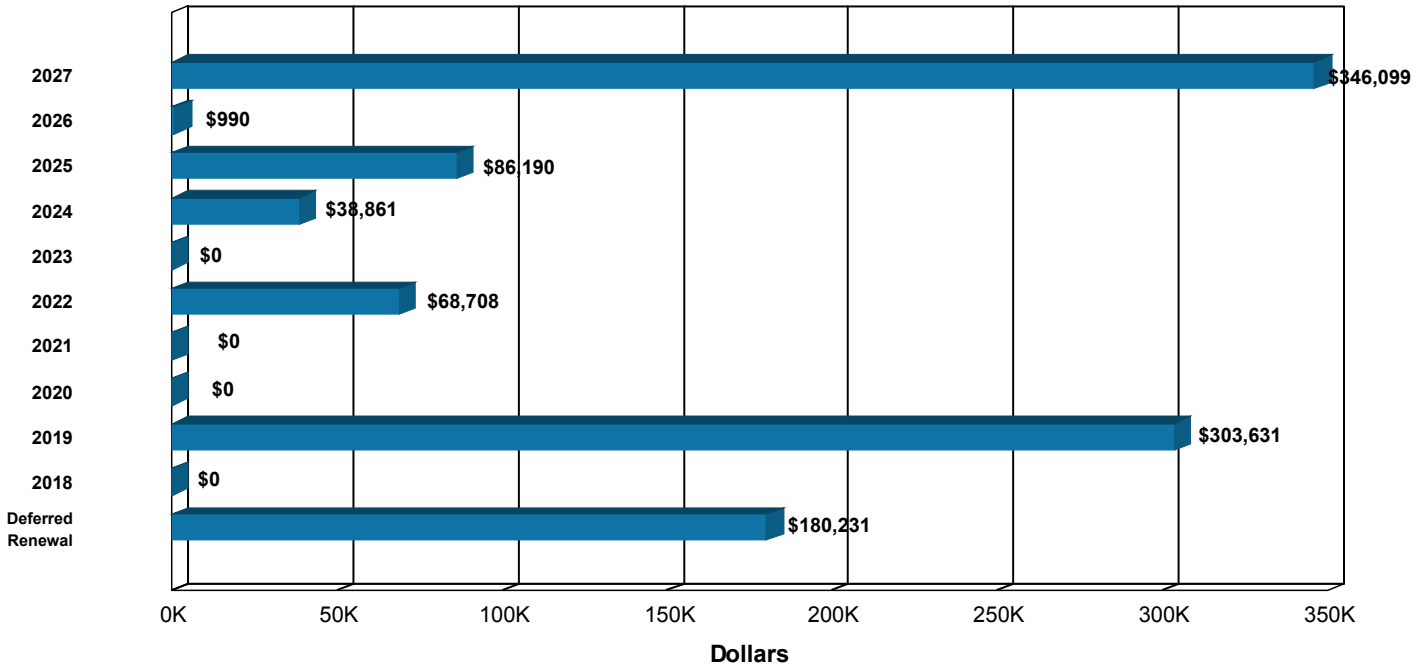
PLANT ADAPTION	
1 - Immediate	**$5,296**
2 - Critical	**$24,047**
3 - Noncritical	**$5,950**



CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System

Accessibility	$7,890	1%
Electrical	$350,375	33%
Exterior	$5,695	1%
Fire/Life Safety	$189,288	18%
Health	$0	0%
HVAC	$152,988	14%
Interiors	$350,500	33%
Plumbing	$3,267	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,060,003**	

ASSET SUMMARY

The Library is a three-story, 34,441 square foot facility constructed in 1964 and substantially renovated in 2015. It provides classrooms and study areas, as well as traditional library stacks with books and other reference material. The partial third level has a single-loaded corridor with restrooms and six classrooms. The basement is a partially subgrade single room which houses some of the mechanical equipment.

Information for this report was gathered during a site visit conducted on September 10, 2018.

Site

The Library is on the north side of North Killingsworth Street on the west side of North Kerby Avenue. The site is flat and is bounded on the south and east sides by concrete pedestrian city sidewalks. A large concrete paved plaza on the north of the building creates a plaza area between the Library and Terrell Hall. The west side of the building faces an asphalt paved mall area in the former right of way of North Borthwick Avenue. The site is heavily landscaped with lawns, ornamental planting, and mature trees. It is in good condition with no recommendations.

Exterior Structure

Two of the roof areas have an asphaltic-membrane application, while the third roof area is finished with a single-ply membrane. All of these are in good condition and no work is recommended at this time. The exterior walls are brick veneer and painted stucco, both of which are in good condition. Windows are metal-framed insulating glass also in good condition. The exterior doors are aluminum and glass storefront style and flush hollow-metal units, all of which should outlast the scope of this report.

Interior Finishes/Systems

Floor finishes include carpet, ceramic tile, and sheet vinyl tile. The sheet vinyl and ceramic tile floor finishes are in good condition and no work is recommended. The carpet, however, will reach the end of its expected lifecycle in the next ten years and should be replaced. The interior walls are painted or finished with ceramic tile. The tile should last beyond the next ten years and it is recommended that the painted walls should be repainted within the next ten years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors are also in good condition and no work is recommended. The break room casework should be considered for replacement within the next ten years.

Accessibility

This building was originally constructed before any accessibility legislation but was completely renovated in 2015 and now substantially meets all current accessibility requirements. The main entrance is at grade level and has a powered door opener. The elevators have compliant control panels, accessible drinking fountains are available on each floor, the door hardware and signage are compliant with accessibility standards, and the restrooms provide the required accessible features. However, two additional upgrades are recommended.

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The third floor, dual-level drinking fountains, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

Current accessibility and life safety regulations require that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the basement stairs were compliant with the code enforced at the time of construction, they are deficient in handrail design relative to current standards. Future renovation efforts should include adding the missing wall-mounted handrail at the basement stair.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits appears adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include various utility rooms. Although only these instances were noted, fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is in good condition. However, it is believed to date to 2001 and will reach the end of its recommended service life within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

A Weil-McLain gas-fired boiler provides heating hot water and has a heating capacity of 2,713 MBH. An expansion tank serves the system. The boiler and expansion tank are in good condition but will reach the end of their service life within the next ten years. Cooling in the form of chilled water is provided by a Trane air-cooled chiller on the site that was installed in 2015. The chiller is in excellent condition and should continue to serve the facility beyond the scope of this report. Pumps installed in 1994 circulate the heating hot water and chilled water. They will reach lifecycle depletion midway through the next ten years and may need to be replaced.

A Haakon air handling unit (AHU) installed in 1994 is equipped with chilled and hot water coils and has a return fan. Distribution equipment consists of metal ductwork that is believed to contain variable air volume (VAV) boxes. Controls are a digital application that were recently upgraded. The equipment is in good condition and has remaining service life. However, a partial control upgrade may need to be considered on a low priority basis. Cooling is also provided by two split systems that serve IT rooms. The units were installed in 2015 and are in excellent condition.

Facility exhaust is provided by two rooftop centrifugal fans that serve restrooms, mechanical spaces, and general exhaust needs. The fans are in adequate condition with one installed in 1994 and the other in 2014. The older fan will reach the end of its service life within the next few years and may need to be replaced. The newer unit should outlast the scope of this report.

Electrical

Power is supplied to the facility at 480/277 volts via an on-site transformer owned by the local utility. Power is then fed to a new 1,200 amp exterior switchboard for distribution to the building. The switchboard has substantial remaining service life with no recommendations.

The electrical distribution system consists of panelboards, motor control centers (MCC), and dry-type transformers. Power is supplied by select panelboards and the MCCs at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased. With the exception of the MCCs, it has substantial remaining

service life. The motor control centers will reach lifecycle depletion in the next few years and should be considered for replacement.

The interior lighting consists of suspended, surface-mount, and lay-in fixtures equipped with acrylic, mesh screen, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting is believed to be original with upgraded ballasts or, as on the third floor, fixtures fitted with LED tubes. Based on age, the older lighting has reached lifecycle depletion and is recommended for replacement.

The exterior lighting consists of eave-mounted recessed fixtures at some of the entryways. Additional lighting is provided by pole-mounted and bollard style light fixtures on the site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage and has substantial remaining service life.

Emergency power is provided by a Cummins diesel-fired generator that provides power at 480/277 volts and has a rated capacity of 175 kW. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears to be well maintained, in good condition, and should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the supply fan and return fan. The VFDs are believed to be new with no recommendations for this report.

Plumbing

Domestic water is supplied through a copper piping network. A backflow preventer on the water systems prevents cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems are in good condition and no issues were reported. While the piping systems should outlast the scope of this report, the backflow preventer has reached the end of its service life.

Domestic hot water is provided by two residential-grade electric water heaters installed at different times. A small pump assists one of the units. The older water heater has reached the end of its service life and is recommended for replacement. The newer water heater and pump have service life beyond the scope of this report. Additionally, an instantaneous water in room 120 will reach lifecycle depletion in the next ten years.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. These fixtures are all within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The facility has two Kone hydraulic passenger elevators that serve two floors each and have rated car capacities of 2,500 pounds. The elevators appear to be in good condition and are believed to have been recently upgraded. They should continue to serve the facility over the next ten years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

September 10, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	1,940	5,950	0	0	0	0	0	0	0	0	0	0	0	$7,890
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	5,695	$5,695
INTERIOR	0	0	0	0	0	0	0	0	0	0	10,096	0	0	340,405	$350,500
PLUMBING	0	0	0	2,277	0	0	0	0	0	0	0	0	990	0	$3,267
HVAC	0	0	0	0	0	3,773	0	0	68,708	0	28,766	51,742	0	0	$152,988
FIRE/LIFE SAFETY	5,296	22,107	0	0	0	161,886	0	0	0	0	0	0	0	0	$189,288
ELECTRICAL	0	0	0	177,954	0	137,972	0	0	0	0	0	34,448	0	0	$350,375
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$5,296	$24,047	$5,950	$180,231	$0	$303,631	$0	$0	$68,708	$0	$38,861	$86,190	$990	$346,099	$1,060,003
TOTAL NONRECURRING PROJECT NEEDS			$35,293	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,024,710	

CURRENT REPLACEMENT VALUE	$13,250,000
FACILITY CONDITION NEEDS INDEX	0.08
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
34,441	$1,060,003	$30.78

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$7,890	$0	$7,890
EXTERIOR	$0	$5,695	$5,695
INTERIOR	$0	$350,500	$350,500
PLUMBING	$0	$3,267	$3,267
HVAC	$0	$152,988	$152,988
FIRE/LIFE SAFETY	$27,403	$161,886	$189,288
ELECTRICAL	$0	$350,375	$350,375
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$35,293**	**$1,024,710**	**$1,060,003**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2060FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	5,296
2060FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	22,107
2060AC02	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	1,940
2060AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	5,950
				TOTAL	**$35,293**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2060	BF01	BACKFLOW PREVENTER (<=1 INCH)	HVAC	0000002686	M1-01	D2020	Deferred Renewal	1,006
2060	WH22	WATER HEATER - RESIDENTIAL, ELECTRIC (15-25 GAL)	STATE	0000002644	J3-01	D2020	Deferred Renewal	1,271
2060	LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY				D5020	Deferred Renewal	177,954
2060	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000002642	ROOF	D3040	2019	3,773
2060	FA01	FIRE ALARM SYSTEM - DEVICES			BDF	D4030	2019	148,028
2060	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		BDF	D4030	2019	13,857
2060	MC01	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (<=400A) W/STARTERS	MCC	0000002684	M1-01	D5010	2019	61,755
2060	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	0000002684	M1-01	D5010	2019	76,217
2060	BL28	BOILER - GAS (2400-3500 MBH)	WEIL MCLAIN	0000002659	M2-01	D3020	2022	68,708
2060	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RM	C1030	2024	10,096
2060	PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000002657	M2-01	D3040	2024	3,385
2060	PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000002656	M2-01	D3040	2024	3,385
2060	PH01	PUMP - ELECTRIC (<=10 HP)	BOILER PUMP		M2-01	D3040	2024	3,385
2060	PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	0000002684	M1-01	D3040	2024	16,926
2060	TK23	EXPANSION TANK, STL PT (50-450 GAL)	ADAMSON	0000002681	M1-01	D3040	2024	1,684
2060	BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				D3060	2025	33,986

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2060	BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				D3060	2025	17,756
2060	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2025	34,448
2060	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		120	D2020	2026	990
2060	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			BASEMENT	B2030	2027	946
2060	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2027	4,748
2060	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2027	53,531
2060	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2027	286,873
							TOTAL	**$1,024,710**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2060FS01	ELIMINATE FIRE RATING COMPROMISES	1	$5,296
2	2060FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$22,107
3	2060AC02	INTERIOR STAIR UPGRADES	2	$1,940
4	2060AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$5,950
		TOTAL FOR PLANT ADAPTION		**$35,293**
		GRAND TOTAL:		**$35,293**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	2060AC02	2	Plant Adaption	INTERIOR STAIR UPGRADES	$1,940
4	2060AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$5,950
				TOTAL FOR ACCESSIBILITY	**$7,890**
1	2060FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$5,296
2	2060FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$22,107
				TOTAL FOR FIRE/LIFE SAFETY	**$27,403**
				GRAND TOTAL:	**$35,293**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	2060FS01
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	12/10/2018

Category Code: FS5C

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1,2,3,B

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include various utility rooms. Although only these instances were noted, fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	34,441	$0.03	$1,033	$0.08	$2,755	$3,789
			Base Material/Labor Costs	**$1,033**		**$2,755**	
			Indexed Material/Labor Costs	**$1,027**		**$2,777**	**$3,804**
						Construction Mark Up at 20.0%	**$761**
						Original Construction Cost	**$4,565**
Date of Original Estimate: 12/10/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$4,565**
						Professional Fees at 16.0%	**$730**
						TOTAL PROJECT COST	**$5,296**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	2060FS02	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/10/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	20	$304	$6,080	$488	$9,760	$15,840
Base Material/Labor Costs				**$6,080**		**$9,760**	
Indexed Material/Labor Costs				**$6,044**		**$9,838**	**$15,882**
Construction Mark Up at 20.0%							**$3,176**
Original Construction Cost							**$19,058**
Date of Original Estimate: 12/10/2018						**Inflation**	**$0**
Current Year Construction Cost							**$19,058**
Professional Fees at 16.0%							**$3,049**
TOTAL PROJECT COST							**$22,107**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	2060AC02	**Category Code:** AC3B	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/10/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Item Only: Floor(s) B
ADAAG	505		

Description

Current accessibility and life safety regulations require that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the basement stairs were compliant with the code enforced at the time of construction, they are deficient in handrail design relative to current standards. Future renovation efforts should include adding the missing wall-mounted handrail at the basement stair.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	1	$729	$729	$663	$663	$1,393
Base Material/Labor Costs				**$729**		**$663**	
Indexed Material/Labor Costs				**$725**		**$668**	**$1,394**
Construction Mark Up at 20.0%							**$279**
Original Construction Cost							**$1,672**
Date of Original Estimate: 12/10/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,672**
Professional Fees at 16.0%							**$268**
TOTAL PROJECT COST							**$1,940**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	2060AC01	**Category Code:** AC3F	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/10/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.2	Not Applicable	Item Only: Floor(s) 3

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The third floor, dual-level drinking fountains, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$932**		**$3,321**	
			Indexed Material/Labor Costs	**$927**		**$3,348**	**$4,275**
					Construction Mark Up at 20.0%		**$855**
					Original Construction Cost		**$5,130**
Date of Original Estimate: 12/10/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$5,130**
					Professional Fees at 16.0%		**$821**
					TOTAL PROJECT COST		**$5,950**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				5,660	SF	1.27	$86,465	2015	30		2045
WN05	GLASS, STOREFRONT				3,140	SF	1.27	$502,697	2015	40		2055
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				2	LEAF	1.00	$6,044	2015	25		2040
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	SERVICE			2	LEAF	1.00	$4,013	2015	40		2055
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			BASEMENT	1	LEAF	1.00	$2,007	2015	40		2055
DR28	DOOR OPERATOR, POWER-ASSIST			RESTROOM	2	EA	1.00	$13,541	2015	20		2035
DR28	DOOR OPERATOR, POWER-ASSIST			ENTRY	2	EA	1.00	$13,541	2015	20		2035
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			BASEMENT	1	EA	1.00	$946	2015	12		2027
DR36	DOOR PANIC HARDWARE, EXTERIOR				4	EA	1.00	$4,748	2015	12		2027
RR03	ROOF - 1-PLY, UNBALLASTED				2,520	SF	1.00	$29,823	2015	20		2035
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				14,280	SF	1.00	$249,052	2015	20		2035
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				43	LEAF	1.00	$95,092	2015	60		2075
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				14	LEAF	1.00	$51,359	2015	60		2075
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				43	EA	1.00	$32,375	2015	35		2050
DR26	DOOR PANIC HARDWARE, INTERIOR				14	EA	1.00	$16,617	2015	30		2045

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RM	18	LF	1.00	$10,096	1994	30		2024
IW01	WALL FINISH - APPLIED, STANDARD				19,180	SF	1.00	$53,531	2015	12		2027
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,010	SF	1.00	$40,907	2015	60		2075
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				24,080	SF	1.00	$286,873	2015	12		2027
IF04	FLOORING - VINYL SHEET, STANDARD				260	SF	1.00	$2,931	2015	15		2030
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				1,830	SF	1.00	$64,538	2015	40		2055
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				20,940	SF	1.00	$233,066	2015	45		2060
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				5,240	SF	1.00	$14,625	2015	24		2039
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS			E2-02	1	EA	1.00	$257,984	2015	25		2040
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS			E2-02	1	EA	1.00	$257,984	2015	25		2040
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				3	EA	1.00	$8,082	2015	25		2040
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				11	EA	1.00	$14,863	2015	35		2050
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	2015	20		2035
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	2015	50		2065
FX10	PLUMBING FIXTURE - URINAL				2	EA	1.00	$2,157	2015	35		2050

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				11	EA	1.00	$18,645	2015	35		2050
BF01	BACKFLOW PREVENTER (<=1 INCH)	HVAC	0000002686	M1-01	1	EA	1.00	$1,006	1994	20	3	DR
PS10	SUPPLY PIPING SYSTEM - LIBRARY				34,441	SF	1.00	$164,370	1994	50		2044
WH22	WATER HEATER - RESIDENTIAL, ELECTRIC (15-25 GAL)	STATE	0000002644	J3-01	20	GAL	1.00	$1,271	1994	15	8	DR
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	AO SMITH	0000005674	J1-01	30	GAL	1.00	$1,367	2015	15		2030
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		120	1	EA	1.00	$990	2016	10		2026
PD10	DRAIN PIPING SYSTEM - LIBRARY				34,441	SF	1.00	$246,219	1994	60		2054
BL28	BOILER - GAS (2400-3500 MBH)	WEIL MCLAIN	0000002659	M2-01	2,713	MBH	1.00	$68,708	1994	28		2022
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	TRANE	0000005672	SITE	130	TON	1.00	$164,112	2015	30		2045
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	0000005680	ROOF	2	TON	0.45	$2,061	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-2	0000005681	ROOF	2	TON	0.45	$2,061	2015	25		2040
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005673	BDF	2	TON	0.45	$2,092	2015	30		2045
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005677	E2-02	2	TON	0.45	$2,092	2015	30		2045
AH13	AIR HANDLING UNIT - INDOOR (45-63 HP)	AHU-1	0000002687	M1-01	50	HP	1.00	$232,930	1994	35		2029
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	AHU RET FAN	0000002690	M1-01	15	HP	1.00	$29,431	1994	35		2029

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000005682	ROOF	1	EA	1.00	$3,773	2014	25		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000002642	ROOF	1	EA	1.00	$3,773	1994	25		2019
HV10	HVAC DISTRIBUTION NETWORKS - LIBRARY				34,441	SF	1.00	$1,312,528	1994	45		2039
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	0000002684	M1-01	10	HP	1.00	$16,926	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000002657	M2-01	2	HP	1.00	$3,385	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000002656	M2-01	2	HP	1.00	$3,385	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR		J1-01	1	HP	0.50	$846	2015	30		2045
PH01	PUMP - ELECTRIC (<=10 HP)	BOILER PUMP		M2-01	2	HP	1.00	$3,385	1994	30		2024
TK23	EXPANSION TANK, STL PT (50-450 GAL)	ADAMSON	0000002681	M1-01	50	GAL	1.00	$1,684	1994	30		2024
BA10	HVAC CONTROLS - TERMINAL ASSEMBLIES - LIBRARY				34,441	SF	1.00	$119,722	2015	20		2035
BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				34,441	SF	1.00	$33,986	2015	10		2025
BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				34,441	SF	1.00	$17,756	2015	10		2025
FS01	FIRE SPRINKLER SYSTEM - WET				34,441	SF	1.00	$465,940	1964	80		2044
FA01	FIRE ALARM SYSTEM - DEVICES			BDF	34,441	SF	1.00	$148,028	2001	18		2019
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		BDF	1	EA	1.00	$13,857	2001	18		2019

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2010	18		2028
MC01	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (<=400A) W/STARTERS	MCC	0000002684	M1-01	1	EA	1.00	$61,755	1994	25		2019
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	0000002684	M1-01	1	EA	1.00	$76,217	1994	25		2019
SE10	ELECTRICAL DISTRIBUTION NETWORK - LIBRARY				34,441	SF	1.00	$404,956	1994	50		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDP-SES	0000006565	SITE	1,200	AMP	1.00	$89,981	2016	40		2056
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-1 RET FAN	0000005678	M1-01	15	HP	1.00	$6,433	2016	16		2032
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	AHU-1	0000005679	M1-01	50	HP	1.00	$14,153	2016	19		2035
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNTED		BLDG EXT	4	EA	1.00	$2,034	2015	20		2035
LE04	COM EXTERIOR BOLLARD LIGHTING	SITE		SITE	4	EA	1.00	$5,264	2015	20		2035
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)	SITE		SITE	6	EA	1.00	$11,686	2015	40		2055
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	SITE		SITE	6	EA	1.00	$7,509	2015	20		2035
LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY				30,000	SF	1.00	$177,954	1994	20	3	DR
LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY	3RD FL			4,441	SF	1.00	$26,343	2017	20		2037
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				15,000	SF	1.00	$34,448	2005	20		2025
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL	3RD FL			4,441	SF	1.00	$10,199	2017	20		2037

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN03	GENERATOR - DIESEL (100-200 KW)	CUMMINS		SITE	175	KW	1.00	$107,890	2015	25		2040
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-4E	0000005234	111	125	AMP	1.00	$4,963	2015	25		2040
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-4S	0000005235	111	125	AMP	1.00	$4,963	2015	25		2040
							Grand Total:	**$6,508,655**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	BACKFLOW PREVENTER (<=1 INCH)	HVAC	1	EA	$1,006	DR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (15-25 GAL)	STATE	20	GAL	$1,271	DR
D5020	LIGHTING SYSTEM, INTERIOR - LIBRARY		30,000	SF	$177,954	DR
				TOTAL DEFERRED RENEWAL COST	$180,231	

No Projected Component Replacement Cost for Asset No. 2060 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (<=400A) W/STARTERS	MCC	1	EA	$63,608	2019
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	1	EA	$78,504	2019
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$14,273	2019
D4030	FIRE ALARM SYSTEM - DEVICES		34,441	SF	$152,469	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	1	EA	$3,886	2019
	2019	PROJECTED COMPONENT REPLACEMENT COST			$312,740	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2060 for 2020

No Projected Component Replacement Cost for Asset No. 2060 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3020	BOILER - GAS (2400-3500 MBH)	WEIL MCLAIN	2,713	MBH	$77,331	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$77,331	

No Projected Component Replacement Cost for Asset No. 2060 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		18	LF	$12,055	2024
D3040	PUMP - ELECTRIC (<=10 HP)	CWP-1	10	HP	$20,211	2024
D3040	PUMP - ELECTRIC (<=10 HP)	HWP-1	2	HP	$4,042	2024
D3040	PUMP - ELECTRIC (<=10 HP)	HWP-2	2	HP	$4,042	2024
D3040	PUMP - ELECTRIC (<=10 HP)	BOILER PUMP	2	HP	$4,042	2024
D3040	EXPANSION TANK, STL PT (50-450 GAL)	ADAMSON	50	GAL	$2,010	2024

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2024	PROJECTED COMPONENT REPLACEMENT COST	$46,403	

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		15,000	SF	$42,367	2025
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY		34,441	SF	$21,837	2025
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY		34,441	SF	$41,799	2025
2025	PROJECTED COMPONENT REPLACEMENT COST				$106,003	

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,254	2026
2026	PROJECTED COMPONENT REPLACEMENT COST				$1,254	

2027

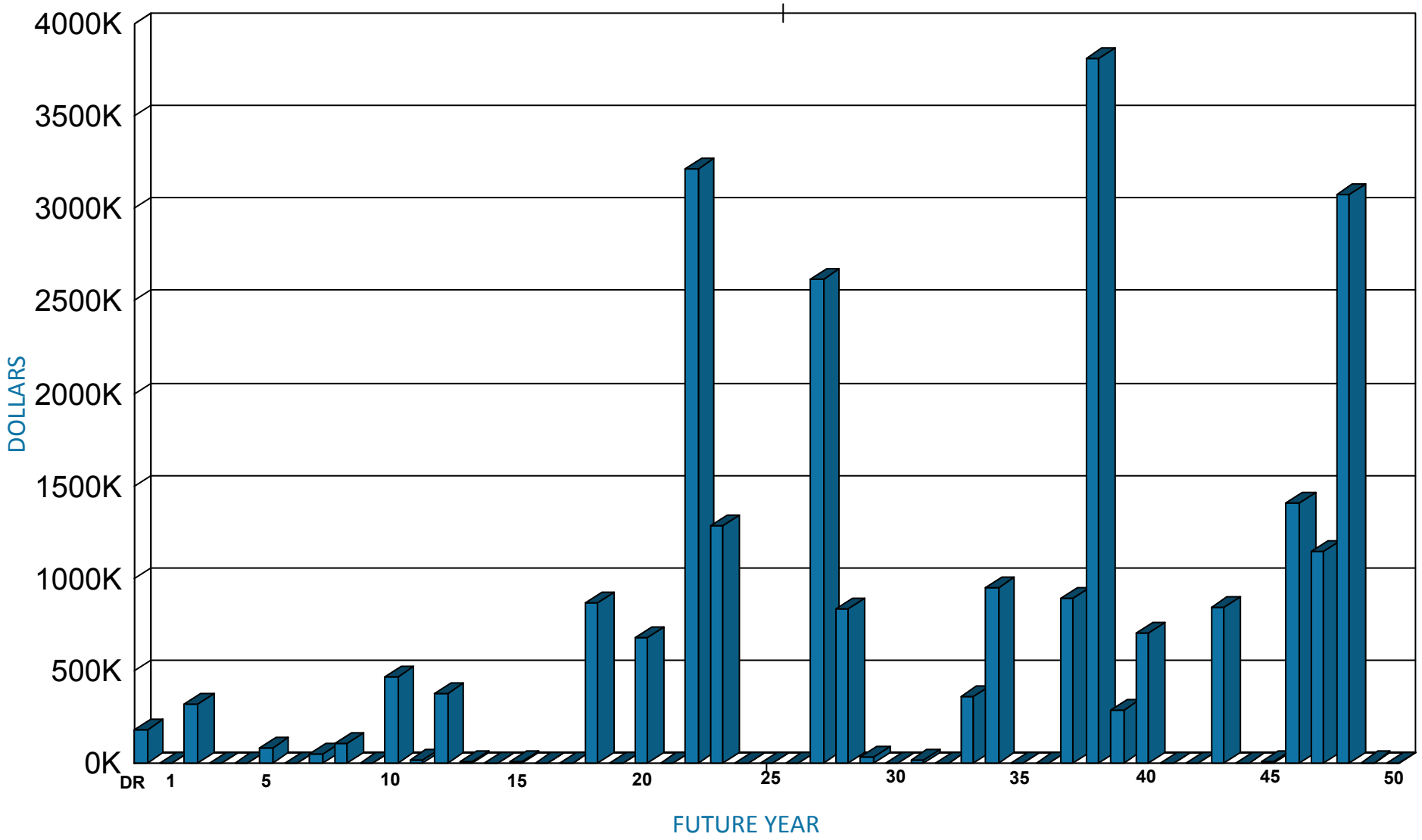
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		24,080	SF	$374,304	2027
C3010	WALL FINISH - APPLIED, STANDARD		19,180	SF	$69,846	2027
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		1	EA	$1,235	2027
B2030	DOOR PANIC HARDWARE, EXTERIOR		4	EA	$6,195	2027

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

	2027	**PROJECTED COMPONENT REPLACEMENT COST**	**$451,581**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



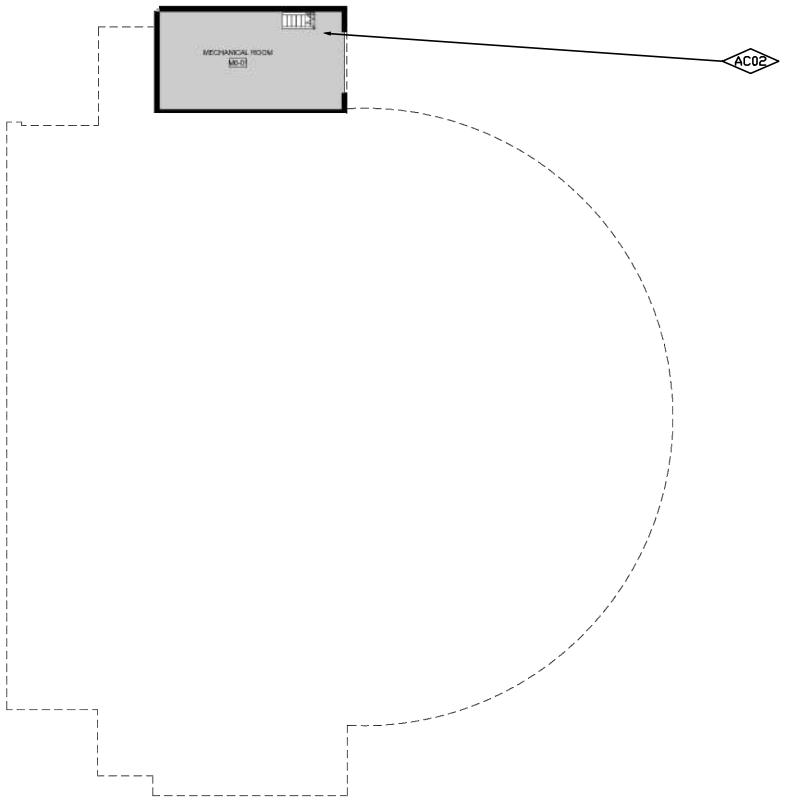
Average Annual Renewal Cost per SF $5.72

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



FS01

LIBRARY

BLDG NO. 2060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

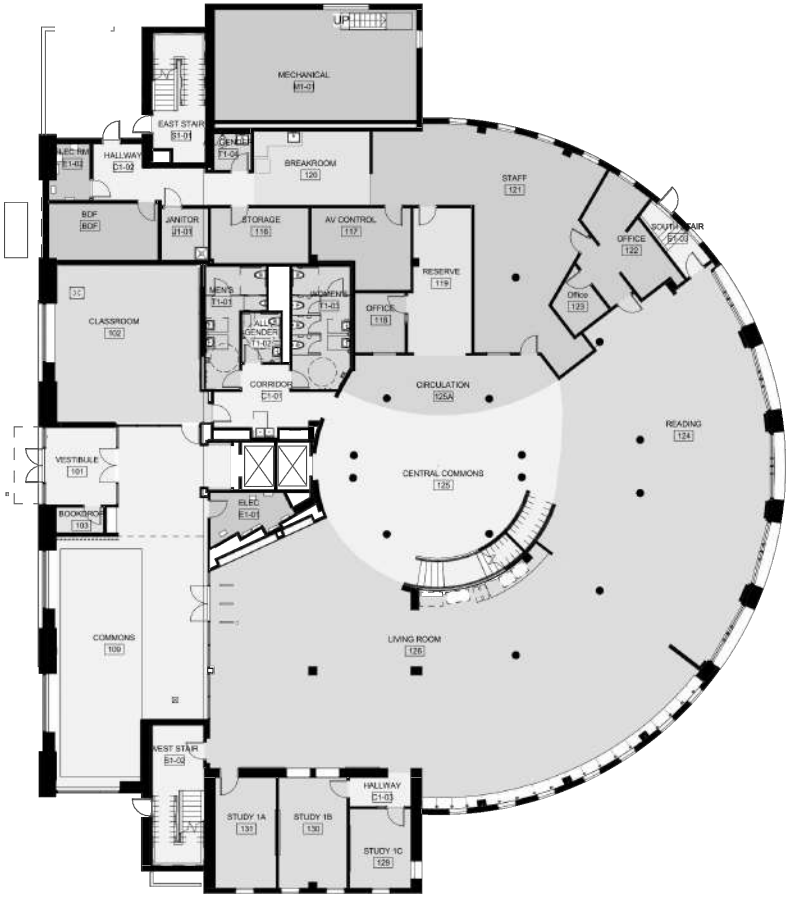
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

BASEMENT FLOOR PLAN

Sheet No.
1 of 4

PORTLAND COMMUNITY COLLEGE



FS01

LIBRARY

BLDG NO. 2060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

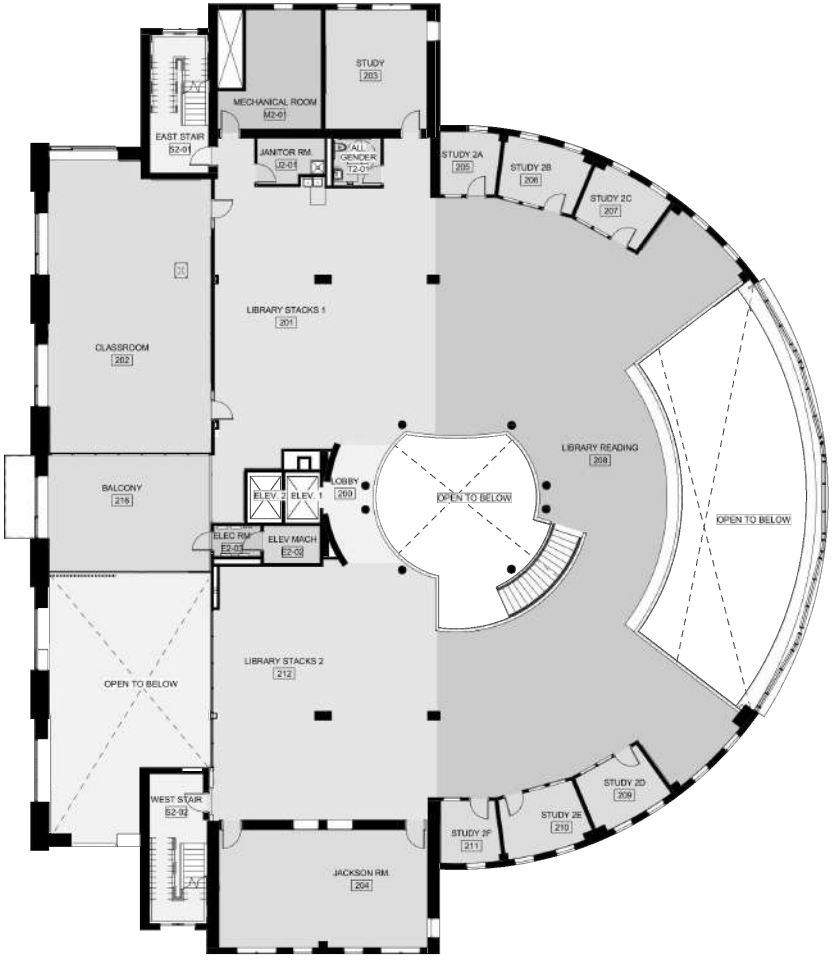
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
2 of 4

PORTLAND COMMUNITY COLLEGE



FS01

LIBRARY

BLDG NO. 2060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

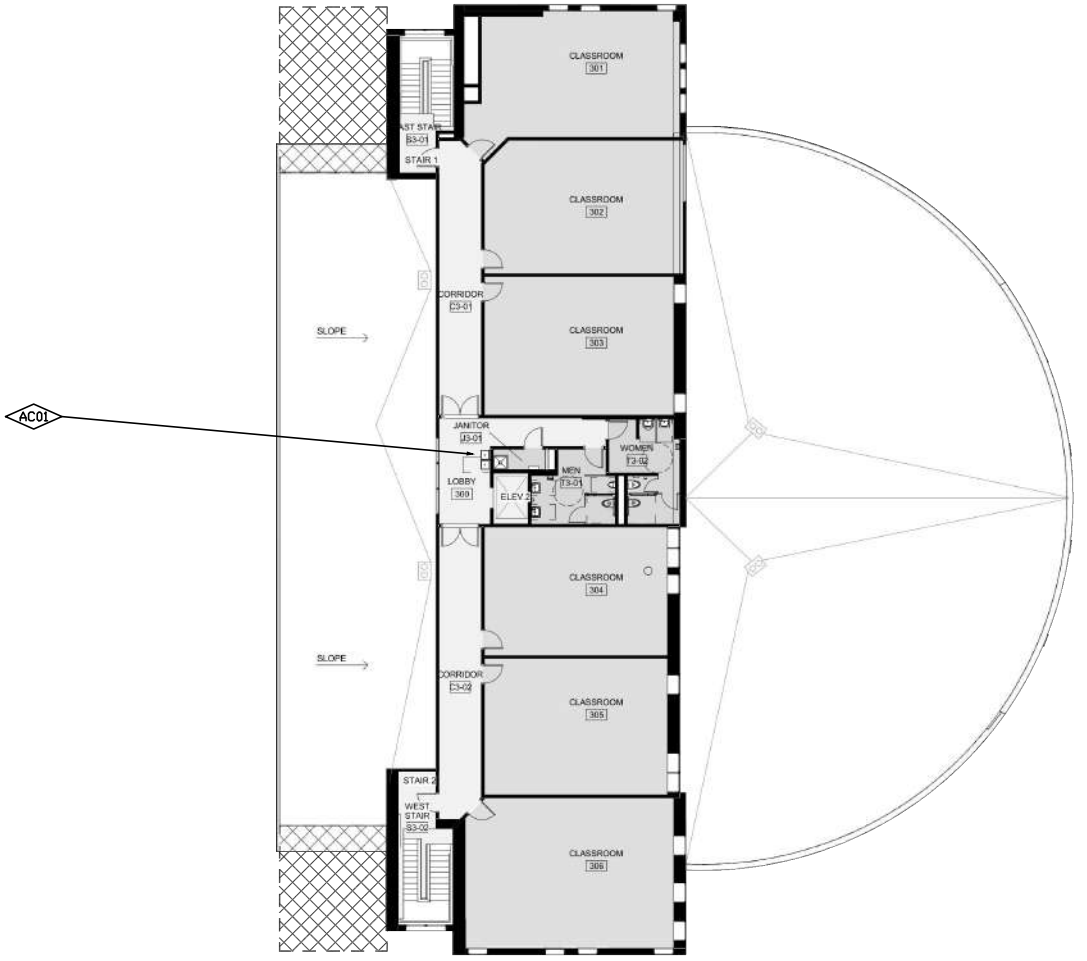
Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
3 of 4

PORTLAND COMMUNITY COLLEGE

ROOF
FS02



FS01

LIBRARY

BLDG NO. 2060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
4 of 4

SECTION 6

PHOTOGRAPHS

2060001a 9/10/2018

Exterior finishes at the main entrance

North elevation

2060001e 9/10/2018

Car operating panel

Elevator cab

2060002a 9/10/2018

Exterior finishes and site conditions

East elevation

2060002e 9/10/2018

Car operating panel

Elevator cab

2060003a 9/10/2018

Exterior finishes and site conditions

East elevation

2060003e 9/10/2018

Exhaust fan

Roof

2060004a 9/10/2018
Exterior finishes and site conditions
South elevation

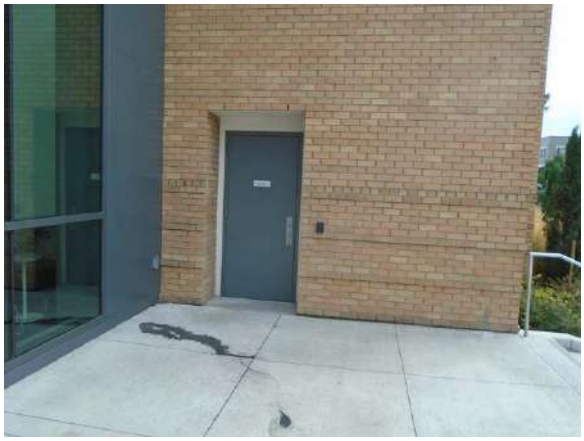
2060004e 9/10/2018
Fire alarm devices and interior lighting
Third floor, corridor

2060005a 9/10/2018
Mall area adjacent to the building
West elevation

2060005e 9/10/2018
Fire alarm devices and interior lighting
Third floor, corridor

2060006a 9/10/2018
Exterior finishes and site conditions
West elevation

2060006e 9/10/2018
Panelboard
Third floor, room J3-01



2060007a 9/10/2018

Exit door

North elevation

2060007e 9/10/2018

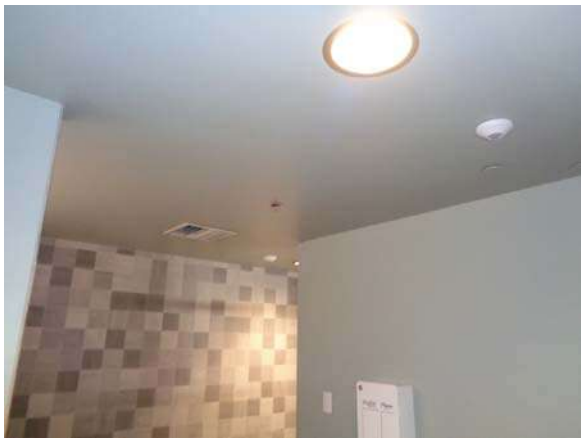
Water heater

Third floor, room J3-01

2060008a 9/10/2018

Plaza area at the main entrance

North exterior



2060008e 9/10/2018

Occupancy sensor and interior lighting

Third floor, room T3-02

2060009a 9/10/2018

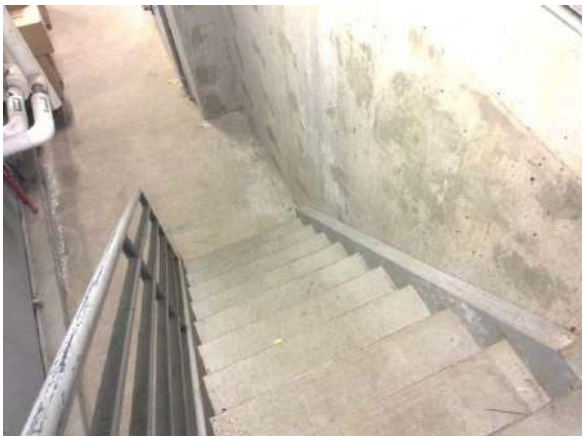
Basement stair missing required handrail

Room M0-01

2060009e 9/10/2018

Interior lighting

Third floor, room 301



2060010a 9/10/2018
Basement stair missing required handrail
Room M0-01

2060010e 9/10/2018
Digital thermostat
Third floor, room 301

2060011a 9/10/2018
Accessible drinking fountains
Corridor C1-01

2060011e 9/10/2018
Interior lighting
Third floor, room 305

2060012a 9/10/2018
Toilet partitions and area finishes
Room T1-03

2060012e 9/10/2018
Smoke detector and sprinkler head
Third floor, room 306

2060013a 9/10/2018

Lavatories and accessories

Room T1-03

2060013e 9/10/2018

Condensing unit

Roof

2060014a 9/10/2018

Lavatories and toilet partitions

Room T1-01

2060014e 9/10/2018

Exhaust fan

Roof

2060015a 9/10/2018

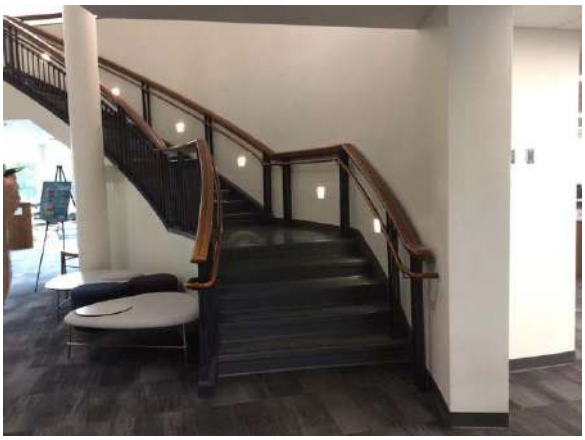
Study area finishes

Room 126

2060015e 9/10/2018

Radiator

Second floor, stairwell



2060016a 9/10/2018

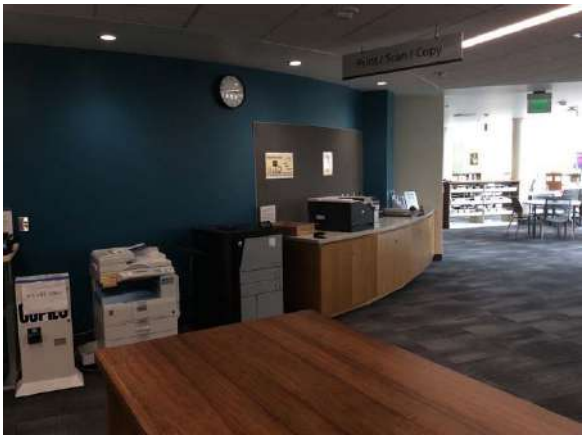
Monumental stair with compliant handrails

Room 125

2060016e 9/10/2018

Boiler

Second floor, room M2-01



2060017a 9/10/2018

Area finishes

Room 126

2060017e 9/10/2018

Pump equipment

Second floor, room M2-01

2060018a 9/10/2018

Finishes at the atrium

Room 125

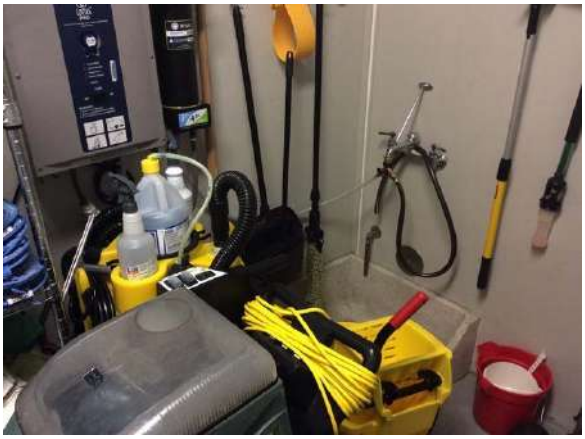
2060018e 9/10/2018

Unit heater

Second floor, room M2-01

2060019a 9/10/2018
Break room casework and sink
Room 120

2060019e 9/10/2018
Interior lighting
Second floor, room J2-01



2060020a 9/10/2018
Utility sink
Room T1-01

2060020e 9/10/2018
Occupancy sensor and interior lighting
Second floor, room 203

2060021a 9/10/2018
Partitions with unfirestopped penetrations
Room BDF

2060021e 9/10/2018
Interior lighting
Second floor, room 204

2060022a 9/10/2018
Main lobby finishes
Room 109

2060022e 9/10/2018
Fire extinguisher
Second floor, room 204

2060023a 9/10/2018
Main lobby finishes
Room 109

2060023e 9/10/2018
Drain piping
First floor, room 120

2060024a 9/10/2018
Unfirestopped wall penetration
Room M2-01

2060024e 9/10/2018
Instant water heater
First floor, room 120

2060025a 9/10/2018

Unfirestopped wall penetration

Room M2-01

2060025e 9/10/2018

Water heater

First floor, room J1-01

2060026a 9/10/2018

Exit door, hardware, and signage

Room 201

2060026e 9/10/2018

Fire alarm panels

First floor, room M1-02

2060027a 9/10/2018

Stacks

Room 201

2060027e 9/10/2018

Evaporator

First floor, room M1-02

2060028a 9/10/2018
Accessible drinking fountain
Room 201

2060028e 9/10/2018
Automatic transfer switch
First floor, room 111

2060029a 9/10/2018
Lavatory and accessories
Room T2-01

2060029e 9/10/2018
Panelboard
First floor, room 111

2060030a 9/10/2018
Accessible water closet and accessories
Room T2-01

2060030e 9/10/2018
Transformer
First floor, room 111

2060031a 9/10/2018

Restroom door with compliant hardware, signage, and powered door opener

Room 201

2060031e 9/10/2018

Interior lighting

First floor, room 111

2060032a 9/10/2018

Atrium and window wall

Room 208

2060032e 9/10/2018

Interior lighting

First floor, room 109

2060033a 9/10/2018

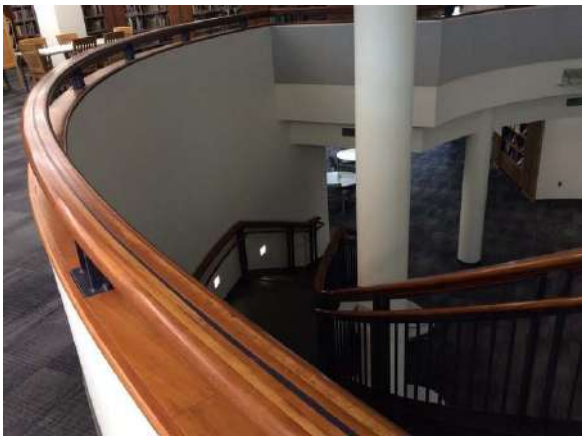
Study room finishes

Room 203

2060033e 9/10/2018

Transformer

First floor, room E1-01



2060034a 9/10/2018

Atrium at the monumental stair

Room 208

2060034e 9/10/2018

Panelboard

First floor, room E1-01

2060035a 9/10/2018

Stacks

Room 212

2060035e 9/10/2018

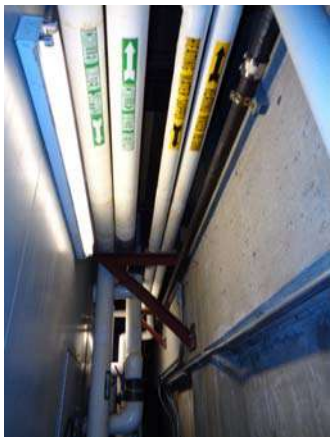
Air handling unit

First floor, room M1-01

2060036a 9/10/2018

Study rooms

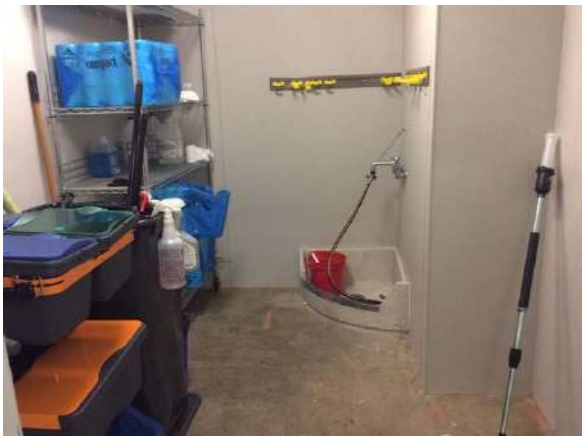
Room 209



2060036e 9/10/2018

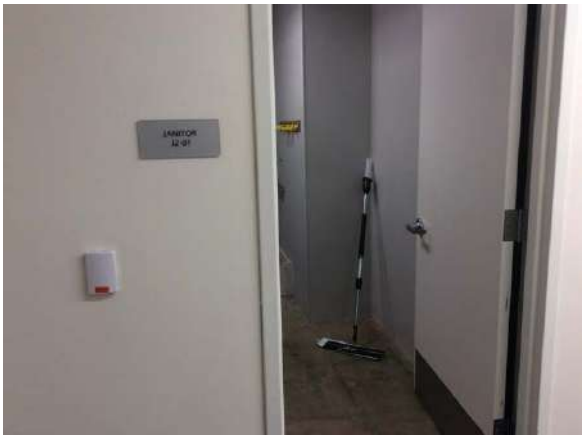
HVAC piping

First floor, room M1-01



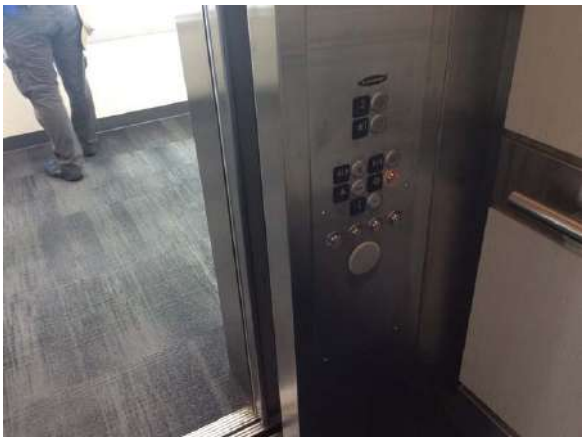
2060037a 9/10/2018
Utility sink
Room J2-01

2060037e 9/10/2018
Electronic actuators
First floor, room M1-01



2060038a 9/10/2018
Compliant room signage and door hardware
Room J2-01

2060038e 9/10/2018
HVAC piping
First floor, room M1-01



2060039a 9/10/2018
Elevator with compliant control panel
Elevator

2060039e 9/10/2018
Backflow preventer
First floor, room M1-01

2060040a 9/10/2018
Roof membrane, drain, and overflow drain
Roof

2060040e 9/10/2018
Pump equipment
First floor, room M1-01

2060041a 9/10/2018
Roof without fall protection
Roof

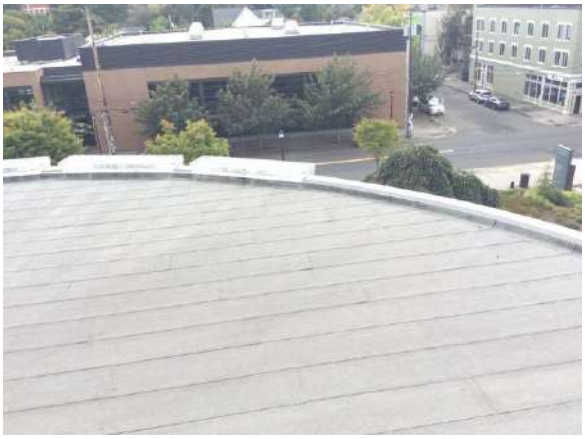
2060041e 9/10/2018
HVAC control panel
First floor, room M1-01

2060042a 9/10/2018
Roof drain and overflow drain
Roof

2060042e 9/10/2018
Motor control center
First floor, room M1-01

2060043a 9/10/2018
Roof membrane and low parapet without fall protection
Roof

2060043e 9/10/2018
Variable frequency drive
First floor, room M1-01



2060044a 9/10/2018
Roof at the stacks area
Roof

2060044e 9/10/2018
Expansion tank
First floor, room M1-01

2060045a 9/10/2018
Roof access and typical flashing
Roof

2060045e 9/10/2018
Bollards
Site

2060046a 9/10/2018

Utility sink

Room J3-01

2060046e 9/10/2018

Gas regulator

Site

2060047a 9/10/2018

Unfirestopped partition penetration

Room J3-01

2060047e 9/10/2018

Air-cooled chiller

Site

2060048a 9/10/2018

Lavatories and area finishes

Room T3-01

2060048e 9/10/2018

Generator

Site

2060049a 9/10/2018

Urinal and toilet partition

Room T3-01

2060049e 9/10/2018

Transformer and electrical switch

Site

2060050a 9/10/2018

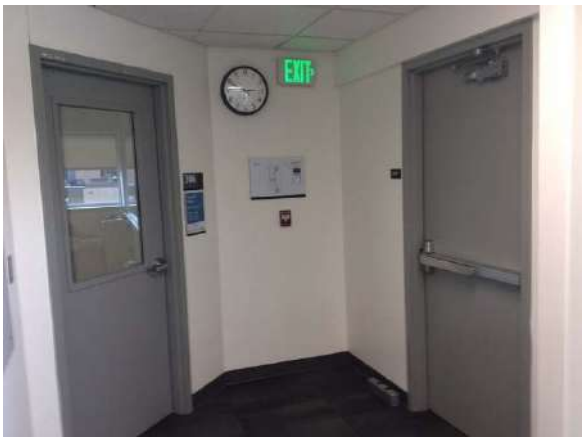
Accessible water closet and accessories

Room T3-01

2060050e 9/10/2018

Switchboard

Site



2060051a 9/10/2018

Exit stair door, hardware, and signage

Corridor C3-02

2060051e 9/10/2018

Switchboard

Site

2060052a 9/10/2018

Typical corridor finishes

Corridor C3-02

2060052e 9/10/2018

Exterior lighting

Site

2060053a 9/10/2018

Elevator lobby with compliant drinking fountains lacking side protection

Lobby 300

2060053e 9/10/2018

Exterior lighting

Site

2060054a 9/10/2018

Typical classroom finishes

Room 306

2060054e 9/10/2018

Exterior lighting

Site

2060055a 9/10/2018
Stair with compliant railings
Stair S3-01

2060055e 9/10/2018
Exterior lighting
Building exterior

2060056a 9/10/2018
Detail at the glazing system
Stair S3-01

2060056e 9/10/2018
Exterior finishes
South elevation

2060057e 9/10/2018
Exterior lighting
Site

2060058e 9/10/2018
Exterior lighting
Site

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2060
Asset Name	Library
Year Built or Last Energy Renovation	1964

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

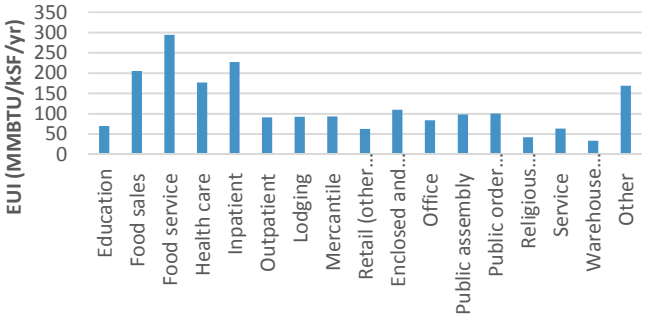
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Library
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**97.9**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 68.5
Energy Efficient (consumes 10% to 30% less energy)	68.5 <= EUI <= 88.1
Similar (consumes within 10% less or 10% more energy)	88.1 < EUI < 107.7
Energy Inefficient (consumes 10% to 30% more energy)	107.7 <= EUI <= 127.3
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 127.3

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

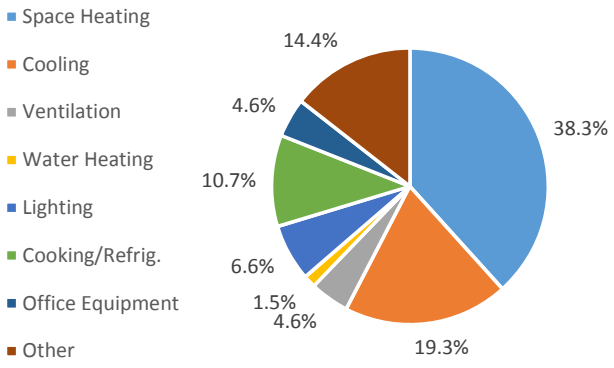


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LIBRARY	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Library



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Central Heating	INSTALL AN ENERGY-EFFICIENT BOILER. Energy-efficient boilers and condensing boilers achieve higher efficiencies than conventional boilers. Research FEMP designated commercial boilers to find the most energy-efficient options.	CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Moriarty Arts and Humanities Building
Asset 2020

Inspected September 11, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

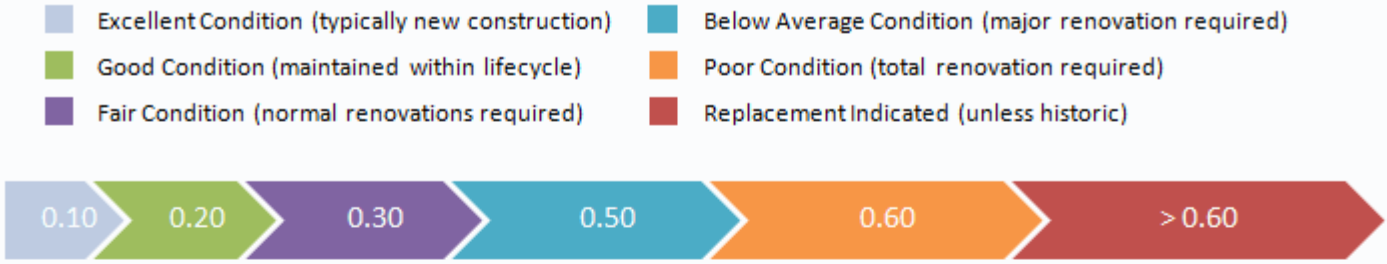
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

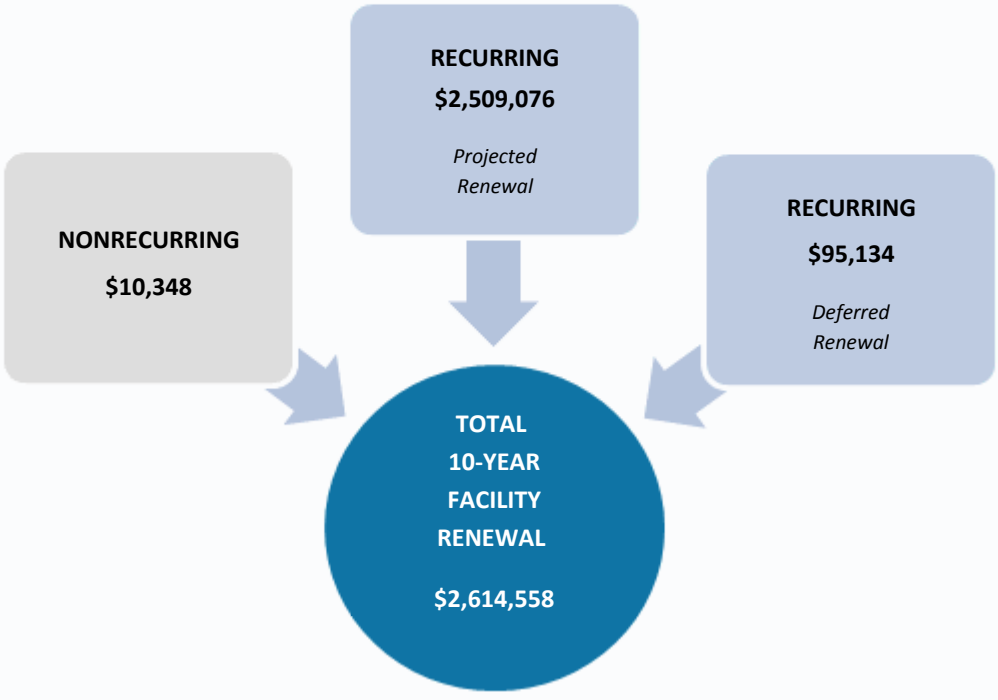
ASSET CODE	2020		
ASSET NAME	MORIARTY ARTS AND HUMANITIES BUILDING	**CURRENT REPLACEMENT VALUE**	$15,475,000
ASSET USE	Theater / Auditorium	**FACILITY CONDITION NEEDS INDEX**	0.17
YEAR BUILT	2006	**FACILITY CONDITION INDEX**	0.01
GSF	47,490	**10-YEAR $/SF**	55.05
INSPECTION DATE	09/11/2018		

FCNI Scale

The FCNI for this asset is **0.17**



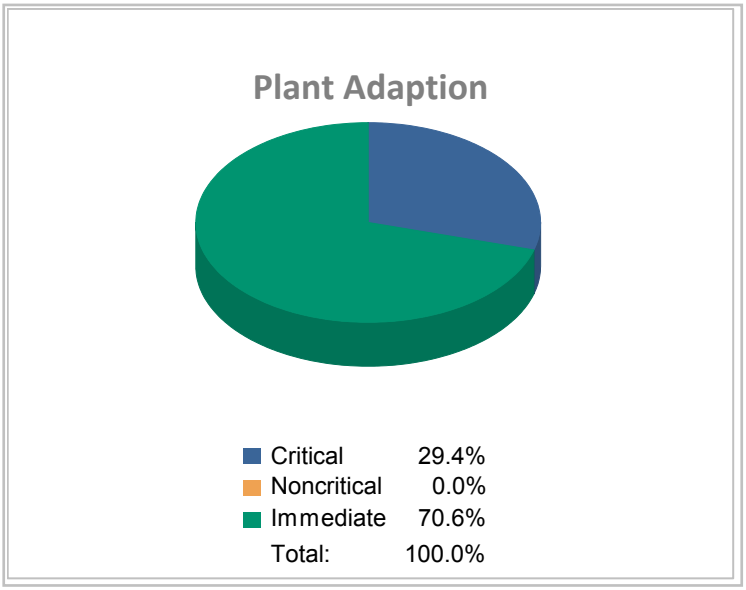
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

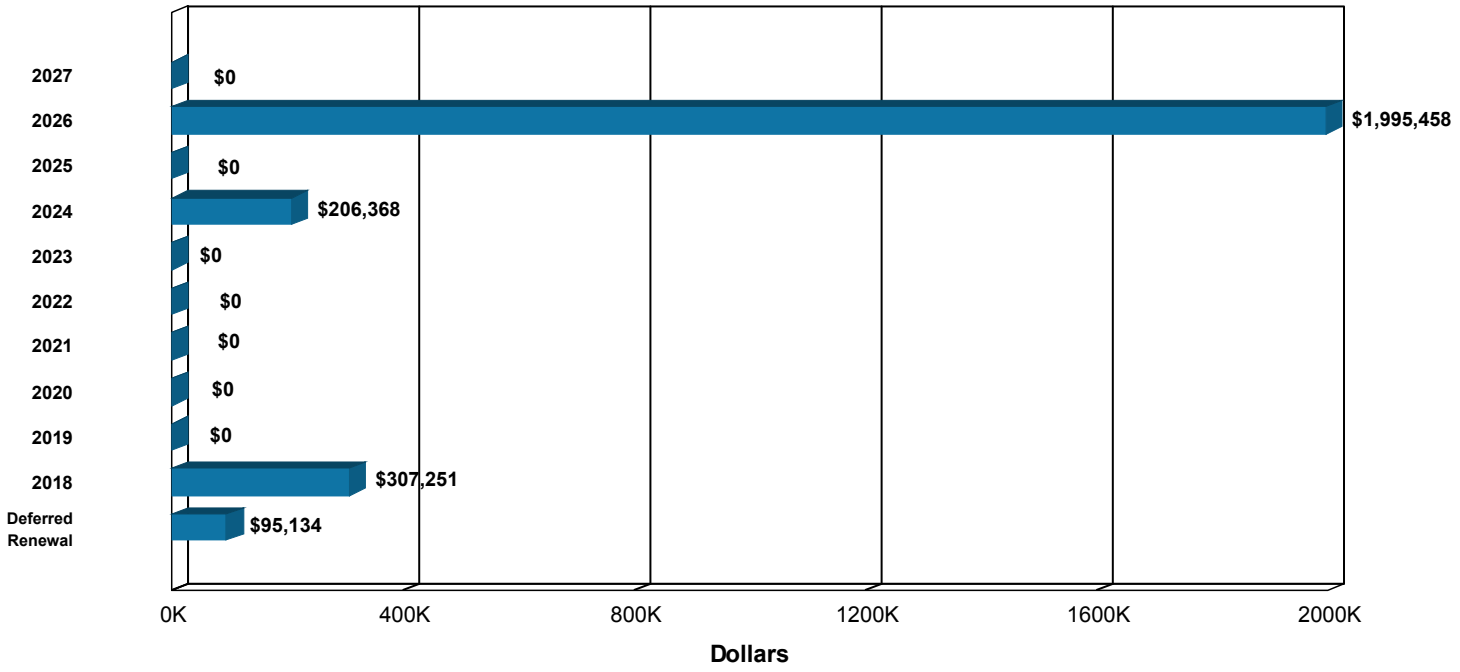
PLANT ADAPTION	
1 - Immediate	**$7,302**
2 - Critical	**$3,046**
3 - Noncritical	**$0**



CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System

Accessibility	$3,046	0%
Electrical	$648,256	25%
Exterior	$537,458	21%
Fire/Life Safety	$213,670	8%
Health	$0	0%
HVAC	$319,677	12%
Interiors	$886,271	34%
Plumbing	$6,180	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$2,614,558**	

ASSET SUMMARY

Moriarty Arts and Humanities Building (MAHB) is a two-story, 47,490 square foot classroom and office facility built in 2006 on the Portland Community College, Cascade campus. The building has a flat, internally drained roof and exterior walls of brick and metal siding. MAHB contains the campus bookstore, the 299-seat Moriarty Auditorium, music studios, art studios, faculty offices and classroom space.

Information for this report was gathered during a site visit conducted on September 11, 2018.

Site

Moriarty Arts and Humanities is on the north side of North Killingsworth Street and the east side of North Albina Avenue. The site is flat and is bordered on the south and west by city-owned concrete pedestrian sidewalks and on the north and east by campus sidewalks. The north side of the building has a fenced area used by the ground floor art studios and includes kilns for the sculpture and ceramics classes. The art area is enclosed by a steel picket fence and is partially paved with concrete. The fence and concrete are in good condition and no work is recommended at this time. Landscaping includes lawn areas, ornamental planting, and trees, all of which are in good condition.

Exterior Structure

The roof is an asphaltic membrane in acceptable condition for its apparent age, but it is expected to reach the end of its anticipated lifecycle in the next ten years and is recommended for replacement. The kilns in the art compound are roofed with a corrugated metal system which is in good condition. Three fiberglass panel skylights appear to be in good condition but are also expected to reach the end of their lifecycle in the next ten years. The exterior walls are brick veneer and corrugated metal siding, both of which are in good condition. Windows are metal-framed insulating glass that should outlast the scope of this report. Exterior doors are aluminum and glass storefront style and flush hollow-metal units. The doors should last beyond the next ten years, but the associated hardware may need to be considered for replacement. The overhead sectional door at the art compound is in good condition and should last beyond the scope of this report.

Interior Finishes/Systems

Floor finishes include hardwood, carpet, and polished, sealed concrete. The hardwood floor is in good condition and no work is recommended at this time. However, the carpet and sealed concrete finishes will reach the end of their expected lifecycles in the next ten years and should be replaced or renewed. The interior walls are painted or finished with fabric wall covering. Both are recommended for replacement within the next ten years. Ceilings are painted hard surfaces and suspended wood and acoustical tile systems, all of which are in good condition.

The interior doors and casework are in good condition and no work is recommended at this time. The fixed seating in the auditorium is within its expected lifecycle and should not require any major work in the next ten years. However, some individual seats are in need of adjustment or repair, which should be handled as a maintenance task. The first floor men's restroom has a damaged urinal screen which is also recommended to be replaced as a part of building maintenance.

Accessibility

This building was constructed in 2006 in compliance with the accessibility requirements at that time. The entrances are at grade level and the main entrance is provided with a powered door opener. The elevator has a compliant control panel, the door hardware and signage are compliant with accessibility standards, and the restrooms provide the required accessible features. However, the ramps in room 214 do not have the required handrails. It is recommended that wall-mounted compliant handrails be installed.

Health

Emergency eyewash stations are available in the event of a mishap. The units are in good condition and should continue to serve the facility over the scope of this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits appears adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility including mechanical and utility spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The circa 2006 system appears to provide adequate coverage and is in good condition. However, it will reach the end of its service life toward the end of the next ten years and may need to be considered for replacement on a low priority basis. A Wheelock mass notification panel is inventoried for information purposes.

The facility is has an automatic sprinkler system with a local compressor providing pressurization. Additional fire suppression is provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two outdoor package units, one manufactured by Aaon and one by McQuay, provide heating (natural gas) and cooling (R410 DX refrigerant). Distribution equipment consists of metal ductwork with variable air volume (VAV) boxes while the controls are a digital application. This HVAC equipment is in good condition and has remaining service life. However, a control upgrade may need to be considered on a low priority basis. Cooling is also provided by several split systems in select rooms. These units are charged with either R410A or R-22 DX refrigerant and are in good condition. They have remaining service life with no recommendations.

Facility exhaust is provided by two rooftop centrifugal fans. The fans serve restrooms, mechanical spaces, and general exhaust needs. They are in good condition and should continue to serve the facility over the scope of this report. Additionally, a dust collector on the first floor appears to be operable and, based on industry standards, has remaining service life.

Electrical

Power is supplied via underground utilities at 480/277 volts to a 1,600 amp Siemens, main switchboard in room E1-01. The switchboard appears to be well maintained and properly marked. The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked, properly encased, and has substantial remaining service life.

The interior lighting consists of suspended and lay-in fixtures equipped with acrylic or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. However, it will reach the end of its normal lifecycle over the scope of this report.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted fixtures on the site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. The fixtures are in good condition but, based on age, some of the lighting may need to be considered for replacement within the scope of this report.

Emergency power is provided by a Cummins diesel-fired generator that provides power at 480/277 volts and has a capacity rating of 250 kW. An automatic transfer switch (ATS) provides the emergency power for distribution. The generator and ATS are well maintained, in good condition, and should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. These new units serve an exhaust fan, supply fan, and a return fan.

Plumbing

Domestic water is supplied through a copper piping network. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems appear to be in good condition and no issues were reported during the site visit. The systems have substantial remaining service life.

Domestic hot water is provided by a gas-fired water heater with a heating capacity of 75 MBH. An expansion tank and pump support the water heater. The domestic water heating equipment is in good condition and should continue to serve the facility over the scope of this report.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. The kitchen sinks will reach the end of their expected lifecycle in the next ten years and are recommended for replacement. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The two-story facility has an Otis hydraulic passenger elevator with a car capacity of 4,500 pounds and controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection with no recommendations at this time.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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770.674.3141
carlm@isescorp.com

Date of Inspection

September 11, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	3,046	0	0	0	0	0	0	0	0	0	0	0	0	$3,046
EXTERIOR	0	0	0	0	15,191	0	0	0	0	0	0	0	522,268	0	$537,458
INTERIOR	0	0	0	0	292,060	0	0	0	0	0	0	0	594,211	0	$886,271
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	6,180	0	$6,180
HVAC	0	0	0	95,134	0	0	0	0	0	0	0	0	224,543	0	$319,677
FIRE/LIFE SAFETY	7,302	0	0	0	0	0	0	0	0	0	206,368	0	0	0	$213,670
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	648,256	0	$648,256
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$7,302	$3,046	$0	$95,134	$307,251	$0	$0	$0	$0	$0	$206,368	$0	$1,995,458	$0	$2,614,558
TOTAL NONRECURRING PROJECT NEEDS			$10,348	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,604,211	

CURRENT REPLACEMENT VALUE	$15,475,000
FACILITY CONDITION NEEDS INDEX	0.17
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
47,490	$2,614,558	$55.05

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$3,046	$0	$3,046
EXTERIOR	$0	$537,458	$537,458
INTERIOR	$0	$886,271	$886,271
PLUMBING	$0	$6,180	$6,180
HVAC	$0	$319,677	$319,677
FIRE/LIFE SAFETY	$7,302	$206,368	$213,670
ELECTRICAL	$0	$648,256	$648,256
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$10,348**	**$2,604,211**	**$2,614,558**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2020FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	7,302
2020AC01	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	3,046
				TOTAL	**$10,348**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2020	BA45	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - THEATER				D3060	Deferred Renewal	63,658
2020	BA68	HVAC CONTROLS - MAJOR INSTRUMENTATION - THEATER				D3060	Deferred Renewal	31,477
2020	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2018	946
2020	DR36	DOOR PANIC HARDWARE, EXTERIOR	ALUMINUM W/ SPANDREL			B2030	2018	1,187
2020	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	2018	13,057
2020	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2018	191,630
2020	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2018	100,429
2020	FA01	FIRE ALARM SYSTEM - DEVICES			E11	D4030	2024	204,113
2020	FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		E11	D4030	2024	2,254
2020	DR28	DOOR OPERATOR, POWER-ASSIST	INT & EXT DRS			B2030	2026	60,933
2020	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2026	436,015
2020	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				B3020	2026	25,320
2020	IW09	WALL FINISH - WALL COVERING, ROLL	WALL FABRIC			C3010	2026	17,104
2020	IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE				C3020	2026	577,107
2020	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2026	6,180
2020	BA22	HVAC CONTROLS - TERMINAL ASSEMBLIES - THEATER				D3060	2026	224,543

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2020	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT		ROOF	D5020	2026	4,068
2020	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			D5020	2026	8,137
2020	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT, RECESSED			D5020	2026	12,346
2020	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2026	5,006
2020	LI22	LIGHTING SYSTEM, INTERIOR - THEATER				D5020	2026	564,168
2020	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2026	54,532
							TOTAL	**$2,604,211**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2020FS01	ELIMINATE FIRE RATING COMPROMISES	1	$7,302
2	2020AC01	AUDITORIUM ACCESSIBILITY UPGRADES	2	$3,046
		TOTAL FOR PLANT ADAPTION		**$10,348**
		GRAND TOTAL:		**$10,348**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	2020AC01	2	Plant Adaption	AUDITORIUM ACCESSIBILITY UPGRADES	$3,046
				TOTAL FOR ACCESSIBILITY	**$3,046**
1	2020FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$7,302
				TOTAL FOR FIRE/LIFE SAFETY	**$7,302**
				GRAND TOTAL:	**$10,348**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	2020FS01
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	12/12/2018

Category Code: FS5C

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Building-wide: Floor(s) 1,2

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include mechanical and utility spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	47,490	$0.03	$1,425	$0.08	$3,799	$5,224
			Base Material/Labor Costs	**$1,425**		**$3,799**	
			Indexed Material/Labor Costs	**$1,416**		**$3,830**	**$5,246**
						Construction Mark Up at 20.0%	**$1,049**
						Original Construction Cost	**$6,295**
Date of Original Estimate: 12/12/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$6,295**
						Professional Fees at 16.0%	**$1,007**
						TOTAL PROJECT COST	**$7,302**

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	2020AC01	**Category Code:**	AC3B
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/12/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADA	505	Not Applicable	Undefined: Floor(s) 2
IBC	1028.13		

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The ramps in music room 214 are devoid of supportive handrails. It is recommended that wall-mounted compliant handrails be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	20	$64.33	$1,287	$45.09	$902	$2,188
			Base Material/Labor Costs	**$1,287**		**$902**	
			Indexed Material/Labor Costs	**$1,279**		**$909**	**$2,188**
						Construction Mark Up at 20.0%	**$438**
						Original Construction Cost	**$2,625**
Date of Original Estimate: 12/12/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$2,625**
						Professional Fees at 16.0%	**$420**
						TOTAL PROJECT COST	**$3,046**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	MECHANICAL SCREEN			790	SF	1.12	$12,038	2006	30		2036
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				1,100	SF	1.12	$2,534	2006	30		2036
WN05	GLASS, STOREFRONT				3,940	SF	1.12	$556,271	2006	40		2046
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			11	LEAF	1.00	$33,245	2006	25		2031
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ALUMINUM W/ SPANDREL			1	LEAF	1.00	$3,022	2006	25		2031
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW		100C	1	LEAF	1.00	$2,007	2006	40		2046
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	SECTIONAL GLASS			120	SF	1.00	$12,503	2006	30		2036
DR28	DOOR OPERATOR, POWER-ASSIST	INT & EXT DRS			9	EA	1.00	$60,933	2006	20		2026
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	SECTIONAL GLASS			1	EA	1.00	$2,095	2006	30		2036
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				1	EA	1.00	$946	2006	12		2018
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			11	EA	1.00	$13,057	2006	12		2018
DR36	DOOR PANIC HARDWARE, EXTERIOR	ALUMINUM W/ SPANDREL			1	EA	1.00	$1,187	2006	12		2018
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				25,000	SF	1.00	$436,015	2006	20		2026
RR11	ROOF - PANEL, ALUMINUM OR GALVANIZED, CORRUGATED				680	SF	1.00	$7,260	2006	40		2046
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				420	SF	1.00	$25,320	2006	20		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				34	LEAF	1.00	$75,189	2006	60		2066
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			24	LEAF	1.00	$88,045	2006	60		2066
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			20	LEAF	1.00	$73,371	2006	60		2066
DR03	DOOR - OVERHEAD, INTERIOR				12	SF	1.00	$1,250	2006	45		2051
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			34	EA	1.00	$25,599	2006	35		2041
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			20	EA	1.00	$15,058	2006	35		2041
DR26	DOOR PANIC HARDWARE, INTERIOR				24	EA	1.00	$28,487	2006	30		2036
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			CLASSRMS	440	LF	1.00	$246,788	2006	30		2036
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BRK RM, WRKRM	42	LF	1.00	$23,557	2006	30		2036
SF01	SEATING, FIXED, FOLDING, STANDARD	100			299	EA	1.00	$105,433	2006	40		2046
IW01	WALL FINISH - APPLIED, STANDARD				68,660	SF	1.00	$191,630	2006	12		2018
IW09	WALL FINISH - WALL COVERING, ROLL	WALL FABRIC			3,000	SF	1.00	$17,104	2006	20		2026
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				8,430	SF	1.00	$100,429	2006	12		2018
IF10	FLOORING - HARDWOOD STRIP, STANDARD	STAGE			670	SF	1.00	$10,702	2006	50		2056
IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE				24,610	SF	1.00	$577,107	2006	20		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				18,010	SF	1.00	$200,455	2006	45		2051
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	WOOD		ADTRM & LOBBY 126	2,230	SF	1.00	$30,121	2006	45		2051
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				3,370	SF	1.00	$9,406	2006	24		2030
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	OTIS	0000004393	239	1	EA	1.00	$257,984	2006	25		2031
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	1.00	$5,388	2006	25		2031
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				16	EA	1.00	$13,771	2006	25		2031
FX04	PLUMBING FIXTURE - SINK, KITCHEN				8	EA	1.00	$6,180	2006	20		2026
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				8	EA	1.00	$13,315	2006	50		2056
FX10	PLUMBING FIXTURE - URINAL				6	EA	1.00	$6,472	2006	35		2041
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				21	EA	1.00	$35,594	2006	35		2041
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000002710	223	1	EA	1.00	$1,080	2006	35		2041
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000002777	108B	1	EA	1.00	$1,080	2006	35		2041
PS22	SUPPLY PIPING SYSTEM - THEATER				47,490	SF	1.00	$375,943	2006	50		2056
TK06	EXPANSION TANK, STL PT (<20 GAL)	PROFLO		M21	10	GAL	1.00	$1,008	2006	30		2036
WH01	WATER HEATER - COMMERCIAL, GAS (<=87 MBH INPUT)	A.O. SMITH	0000001944	M21	75	MBH	1.00	$3,551	2006	25		2031

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PD22	DRAIN PIPING SYSTEM - THEATER				47,490	SF	1.00	$563,780	2006	60		2066
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	SPRINKLER		108C	1	HP	1.00	$2,282	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-2.1	0000002705	ROOF	6	TON	0.40	$5,496	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1.2	0000002706	ROOF	6	TON	0.40	$5,496	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-2.2	0000002707	ROOF	6	TON	0.40	$5,496	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000005644	ROOF	8	TON	0.40	$7,327	2016	25		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000005645	ROOF	8	TON	0.40	$7,327	2016	25		2041
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	DATA AIRE		239	6	TON	0.40	$3,592	2006	30		2036
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	DATA AIRE		216A	6	TON	0.40	$3,592	2006	30		2036
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	DATA AIRE	0000005648	IDF	6	TON	0.40	$3,592	2006	30		2036
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	LIEBERT	0000005646	MDF 11	8	TON	0.40	$4,789	2016	30		2046
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	LIEBERT	0000005647	MDF 11	8	TON	0.40	$4,789	2016	30		2046
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EFR.1.R.1	0000002702	ROOF	1	EA	1.00	$3,773	2006	25		2031
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EFR.1.R.1	0000002703	ROOF	1	EA	1.00	$3,773	2006	25		2031
HV22	HVAC DISTRIBUTION NETWORKS - THEATER				47,490	SF	1.00	$2,288,308	2006	45		2051

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	GRUNDFOS	0000001945	M21	1	HP	0.50	$846	2006	30		2036
HU37	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (9-35 TON)	AHU-R.2	0000002709	ROOF	31	TON	1.00	$210,338	2006	25		2031
HU41	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (>85 TON)	AHU-R.1	0000002708	ROOF	105	TON	1.00	$553,970	2006	25		2031
BA22	HVAC CONTROLS - TERMINAL ASSEMBLIES - THEATER				47,490	SF	1.00	$224,543	2006	20		2026
BA45	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - THEATER				47,490	SF	1.00	$63,658	2006	10	1	DR
BA68	HVAC CONTROLS - MAJOR INSTRUMENTATION - THEATER				47,490	SF	1.00	$31,477	2006	10	1	DR
DC01	DUST COLLECTION SYSTEM	DONALDSON	0000002776	108A	1	SYS	1.00	$15,331	2006	25		2031
FS01	FIRE SPRINKLER SYSTEM - WET		0000002788		37,490	SF	1.00	$507,189	2006	80		2086
FS02	FIRE SPRINKLER SYSTEM - DRY		0000002789		10,000	SF	1.00	$151,811	2006	25		2031
FA01	FIRE ALARM SYSTEM - DEVICES			E11	47,490	SF	1.00	$204,113	2006	18		2024
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		E11	1	EA	1.00	$2,254	2006	18		2024
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		E11	1	EA	1.00	$13,857	2010	18		2028
SE22	ELECTRICAL DISTRIBUTION NETWORK - THEATER				47,490	SF	1.00	$1,342,286	2006	50		2056
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	SB	0000002769	E11	1,600	AMP	1.00	$129,616	2006	40		2046
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-R.2 EX FAN	0000003935	ROOF	2	HP	1.00	$1,453	2015	15		2030

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-R.2 SUP FAN	0000004439	ROOF	7	HP	1.00	$4,632	2015	15		2030
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-R.1	0000003932	ROOF	15	HP	1.00	$6,433	2015	16		2031
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT		ROOF	8	EA	1.00	$4,068	2006	20		2026
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			16	EA	1.00	$8,137	2006	20		2026
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT, RECESSED			16	EA	1.00	$12,346	2006	20		2026
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	4	EA	1.00	$7,790	2006	40		2046
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	4	EA	1.00	$5,006	2006	20		2026
LI22	LIGHTING SYSTEM, INTERIOR - THEATER				47,490	SF	1.00	$564,168	2006	20		2026
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				23,745	SF	1.00	$54,532	2006	20		2026
GN04	GENERATOR - DIESEL (200-500 KW)	GEN-MAHB	0000005649	140	250	KW	1.00	$116,192	2015	25		2040
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-2MAHH	0000005654	220	150	AMP	1.00	$5,956	2015	25		2040
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT	STEEL PICKET FENCE			120	LF	1.00	$5,808	2006	30		2036
							Grand Total:	**$10,870,746**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - THEATER		47,490	SF	$31,477	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - THEATER		47,490	SF	$63,658	DR
				TOTAL DEFERRED RENEWAL COST	$95,134	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		8,430	SF	$100,429	2018
C3010	WALL FINISH - APPLIED, STANDARD		68,660	SF	$191,630	2018
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		1	EA	$946	2018
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	11	EA	$13,057	2018
B2030	DOOR PANIC HARDWARE, EXTERIOR	ALUMINUM W/ SPANDREL	1	EA	$1,187	2018
	2018	PROJECTED COMPONENT REPLACEMENT COST			$307,251	

No Projected Component Replacement Cost for Asset No. 2020 for 2019

No Projected Component Replacement Cost for Asset No. 2020 for 2020

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2020 for 2021

No Projected Component Replacement Cost for Asset No. 2020 for 2022

No Projected Component Replacement Cost for Asset No. 2020 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	1	EA	$2,692	2024
D4030	FIRE ALARM SYSTEM - DEVICES		47,490	SF	$243,722	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$246,414	

No Projected Component Replacement Cost for Asset No. 2020 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		25,000	SF	$552,331	2026
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL		420	SF	$32,074	2026

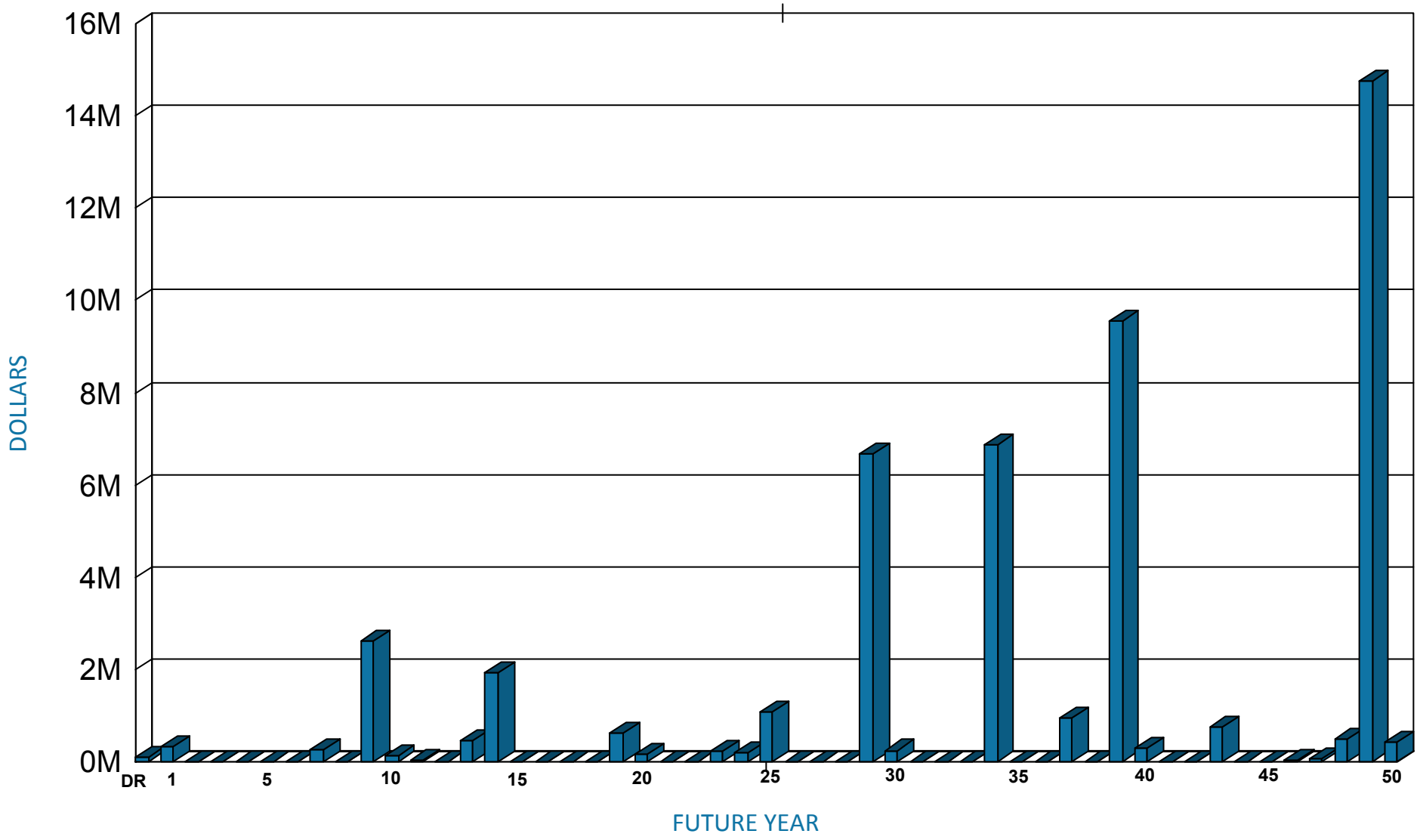
RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE		24,610	SF	$731,061	2026
C3010	WALL FINISH - WALL COVERING, ROLL	WALL FABRIC	3,000	SF	$21,667	2026
B2030	DOOR OPERATOR, POWER-ASSIST	INT & EXT DRS	9	EA	$77,188	2026
D2010	PLUMBING FIXTURE - SINK, KITCHEN		8	EA	$7,829	2026
D5020	LIGHTING SYSTEM, INTERIOR - THEATER		47,490	SF	$714,671	2026
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		23,745	SF	$69,079	2026
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	8	EA	$5,154	2026
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT, RECESSED	16	EA	$15,639	2026
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		4	EA	$6,341	2026
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	16	EA	$10,308	2026
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - THEATER		47,490	SF	$284,444	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$2,527,787**	

No Projected Component Replacement Cost for Asset No. 2020 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.55

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

FS01

MORIARTY ARTS AND HUMANITIES BUILDING

BLDG NO. 2020

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

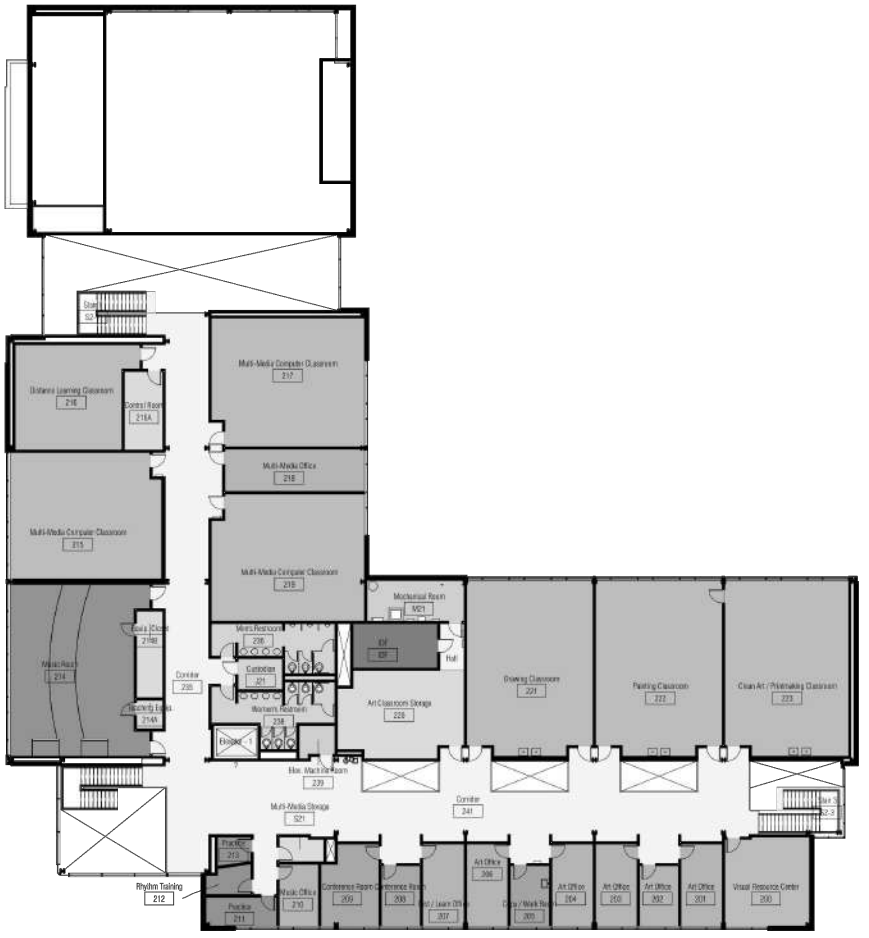
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

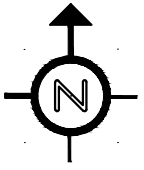
FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE



AC01



MORIARTY ARTS AND HUMANITIES BUILDING

BLDG NO. 2020

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

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PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

2020001a 9/11/2018
Exterior finishes and site conditions
East elevation

2020001e 9/11/2018
Car operating panel
Elevator cab

2020002a 9/11/2018
Street front finishes and site conditions
South elevation

2020002e 9/11/2018
Exterior lighting
East elevation

2020003a 9/11/2018
Exterior finishes at the main entrance
South elevation

2020003e 9/11/2018
Exterior lighting
Site

2020004a 9/11/2018
Street front finishes and site conditions
South elevation

2020004e 9/11/2018
Exterior lighting
South elevation

2020005a 9/11/2018
Exterior finishes and site conditions
East elevation

2020005e 9/11/2018
Exterior lighting
South elevation

2020006a 9/11/2018
Exterior finishes and site at the art compound
North elevation

2020006e 9/11/2018
Exterior lighting
Building exterior

2020007a 9/11/2018
Exterior finishes and site at the art compound
North elevation

2020007e 9/11/2018
Exterior lighting
Site

2020008a 9/11/2018
Exit door from the auditorium
North elevation

2020008e 9/11/2018
Exterior lighting
North elevation

2020009a 9/11/2018
Accessible entrance
East elevation

2020009e 9/11/2018
Generator and kilns
Site

2020010a 9/11/2018

Auditorium finishes

Room 104

2020010e 9/11/2018

Interior lighting

Second floor, room 200

2020011a 9/11/2018

Stage floor finish

Room 104

2020011e 9/11/2018

Interior lighting

Second floor, room 222

2020012a 9/11/2018

Ramped seating with compliant handrail

Room 104

2020012e 9/11/2018

Emergency eyewash station

Second floor, room 223

2020013a 9/11/2018
Seating area and compliant exit signage
Room 104

2020013e 9/11/2018
Interior lighting
Second floor, room 223

2020014a 9/11/2018
Seating in need of repair or adjustment
Room 104

2020014e 9/11/2018
VAV box
Second floor, room 223

2020015a 9/11/2018
Stage access and side aisle handrail
Room 104

2020015e 9/11/2018
Condensing unit
Roof

2020016a 9/11/2018

Stage and ceiling finish

Room 104

2020016e 9/11/2018

Condensing unit

Roof

2020017a 9/11/2018

Stair with compliant railings

Stair S1-1

2020017e 9/11/2018

Rooftop package unit and condensing units

Roof

2020018a 9/11/2018

Lobby finishes and exit door, hardware, and signage

Lobby 126

2020018e 9/11/2018

Exhaust fans

Roof

2020019a 9/11/2018

Music room finishes

Room 103

2020019e 9/11/2018

Rooftop package unit

Roof

2020020a 9/11/2018

Lavatories and area finishes

Room 130

2020020e 9/11/2018

VFDs

Roof

2020021a 9/11/2018

Damaged urinal screen

Room 130

2020021e 9/11/2018

Rooftop package unit

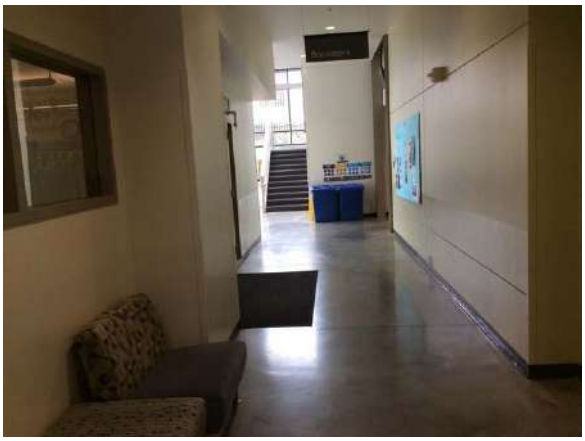
Roof

2020022a 9/11/2018
Unfirestopped wall penetrations
Room 102A

2020022e 9/11/2018
Water heater
Second floor, room M21

2020023a 9/11/2018
Accessible compliant drinking fountains
Corridor 134

2020023e 9/11/2018
Pump
Second floor, room M21



2020024a 9/11/2018
Typical corridor finishes
Corridor 134

2020024e 9/11/2018
ATS
Second floor, room M21

2020025a 9/11/2018

Typical corridor finishes

Corridor 134

2020025e 9/11/2018

Evaporator

Second floor, room IDF2I

2020026a 9/11/2018

Art room finishes and sinks

Room 108B

2020026e 9/11/2018

Ductwork

Second floor, room 220

2020027a 9/11/2018

Art room finishes and sinks

Room 108B

2020027e 9/11/2018

Interior lighting

Second floor, room 221

2020028a 9/11/2018

Art room finishes

Room 108

2020028e 9/11/2018

Elevator machine

Second floor, room 239

2020029a 9/11/2018

Doors to the art compound

Room 108

2020029e 9/11/2018

Emergency lowering device

Second floor, room 239

2020030a 9/11/2018

Detail at the glazing system

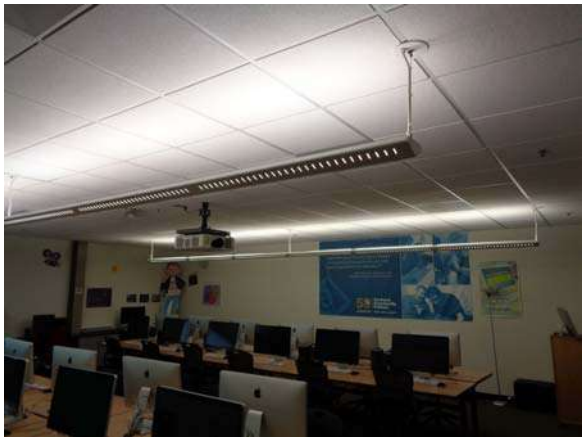
Room 108

2020030e 9/11/2018

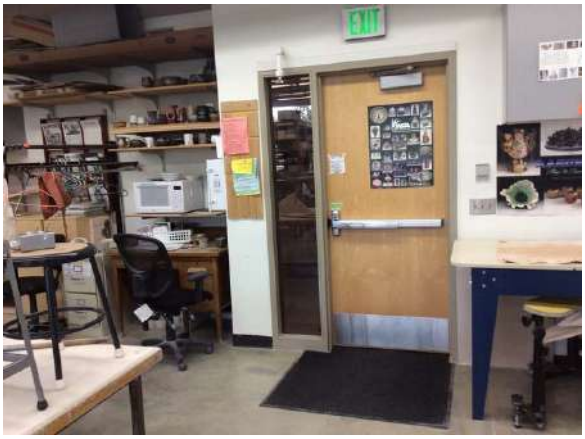
Evaporator

Second floor, room 239

2020031a 9/11/2018
Metal roofed kiln shed
North exterior



2020031e 9/11/2018
Interior lighting
Second floor, room 219



2020032a 9/11/2018
Art room exit door, hardware, and signage
Room 108

2020032e 9/11/2018
Fire extinguisher and interior lighting
Second floor, corridor

2020033a 9/11/2018
Pavement and gravel finish in the art compound
North elevation

2020033e 9/11/2018
Interior lighting
First floor, corridor

2020034a 9/11/2018
Pavement and gravel finish in the art compound
North elevation

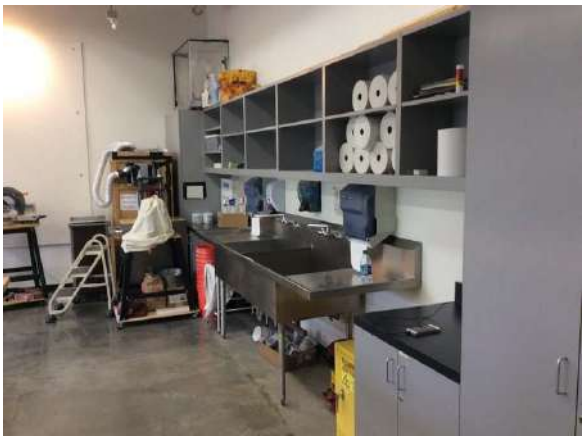
2020034e 9/11/2018
Interior lighting
First floor, room 104

2020035a 9/11/2018
Doors to the ceramics studio
North exterior

2020035e 9/11/2018
Pull station
First floor, corridor

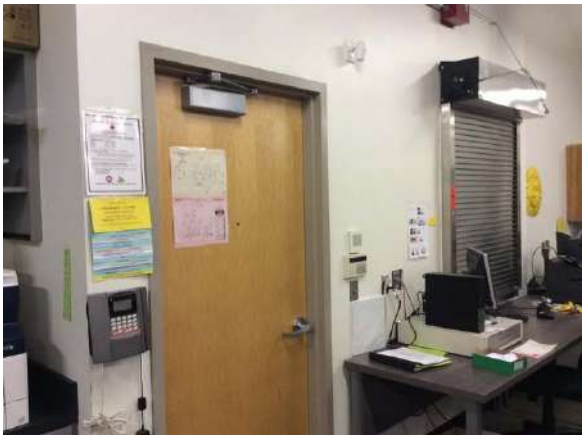
2020036a 9/11/2018
Overhead door at the sculpture studio
Room 109

2020036e 9/11/2018
Interior lighting
First floor, room 103



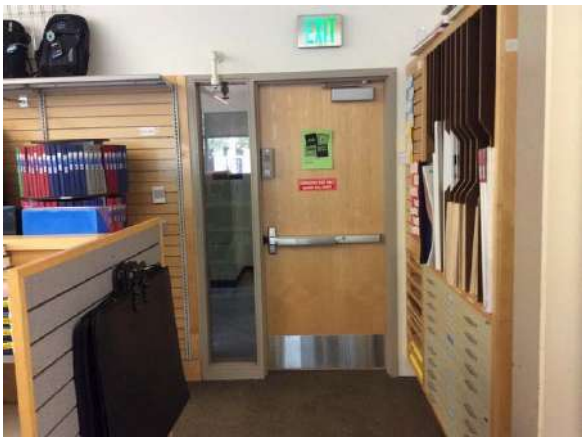
2020037a 9/11/2018
Casework and sinks in the sculpture studio
Room 109

2020037e 9/11/2018
Interior lighting
First floor, room 103B



2020038a 9/11/2018
Overhead door and door with compliant hardware
Room 100C

2020038e 9/11/2018
Switchboard
First floor, room E1-1



2020039a 9/11/2018
Exit door, hardware, and signage
Room 100

2020039e 9/11/2018
Fire alarm panels
First floor, room E1-1

2020040a 9/11/2018

Break area casework and sink

Room 100C

2020040e 9/11/2018

Panelboard

First floor, room E1-1

2020041a 9/11/2018

Bookstore interior finishes

Room 100

2020041e 9/11/2018

Panelboard and transformer

First floor, room E1-1

2020042a 9/11/2018

Elevator compliant control panel

Elevator

2020042e 9/11/2018

ATS

First floor, room E1-1

2020043a 9/11/2018

Exit door, hardware, and signage

Room 222

2020043e 9/11/2018

Interior lighting

First floor, room 107

2020044a 9/11/2018

Casework, sink, and area finishes

Room 222

2020044e 9/11/2018

Wheelock panel

First floor, room MDFII

2020045a 9/11/2018

Typical studio ceiling condition

Room 223

2020045e 9/11/2018

Interior lighting

First floor, room 108

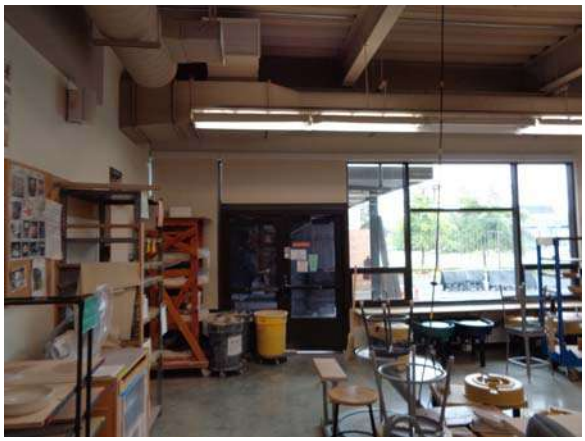
2020046a 9/11/2018
Fire rating labels on a typical corridor door
Room 223

2020046e 9/11/2018
Wash basins
First floor, room 108

2020047a 9/11/2018
Roof membrane and fall protection anchors
Roof

2020047e 9/11/2018
Ductwork
First floor, room 108A

2020048a 9/11/2018
Light monitor above the main entrance lobby
Roof



2020048e 9/11/2018
Interior lighting
First floor, room 108A

2020049a 9/11/2018

Skylight structures

Roof

2020049e 9/11/2018

Eyewash station

First floor, room 108B

2020050a 9/11/2018

Roof drain and overflow scupper

Roof

2020050e 9/11/2018

Interior lighting

First floor, room 108C

2020051a 9/11/2018

Roof access and typical flashing

Roof

2020051e 9/11/2018

Exterior lighting

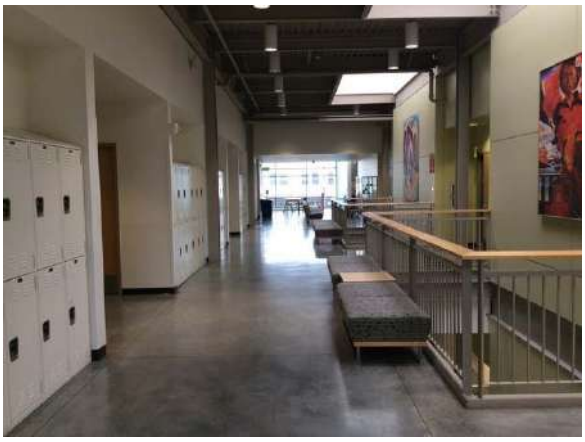
North elevation

2020052a 9/11/2018
Mechanical system screen wall
Roof

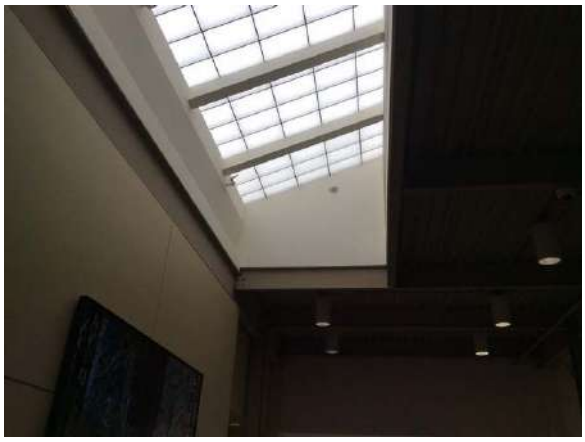
2020052e 9/11/2018
Interior lighting
First floor, room 109

2020053a 9/11/2018
Stair with compliant railings
Main lobby stair

2020053e 9/11/2018
Interior lighting
First floor, room 100



2020054a 9/11/2018
Skylights and borrowed light openings
Corridor 241

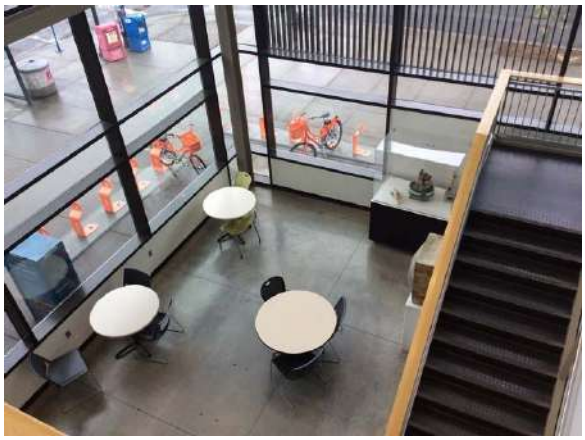


2020055a 9/11/2018
Skylight and ceiling finishes
Corridor 241

2020056a 9/11/2018

Typical corridor finishes

Corridor 235



2020057a 9/11/2018

Atrium space at the main entrance

Lobby 135

2020058a 9/11/2018

Study space and exterior glazing

Main lobby stair

2020059a 9/11/2018

Accessible water closet and accessories

Room 236

2020060a 9/11/2018

Urinals, screens, and area finishes

Room 236

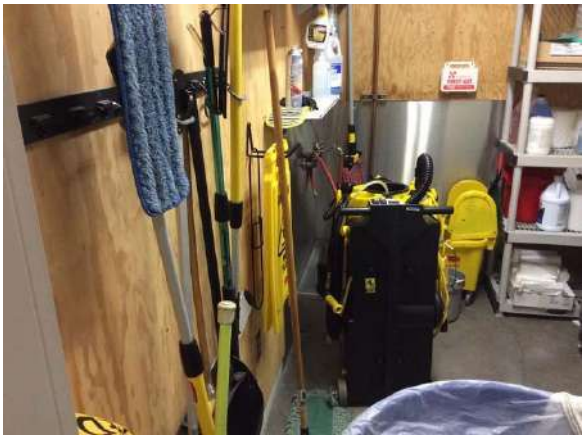
2020061a 9/11/2018

Lavatories and accessories

Room 236

2020062a 9/11/2018
Lavatories and accessories
Room 238

2020063a 9/11/2018
Toilet partitions and area finishes
Room 238



2020064a 9/11/2018
Utility sink
Room J21

2020065a 9/11/2018
Tiered classroom without required handrails
Room 214

2020066a 9/11/2018
Tiered classroom without required handrails
Room 214

2020067a 9/11/2018
Typical classroom finishes
Room 219

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2020
Asset Name	Moriarty Arts and Humanities
Year Built or Last Energy Renovation	2006

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

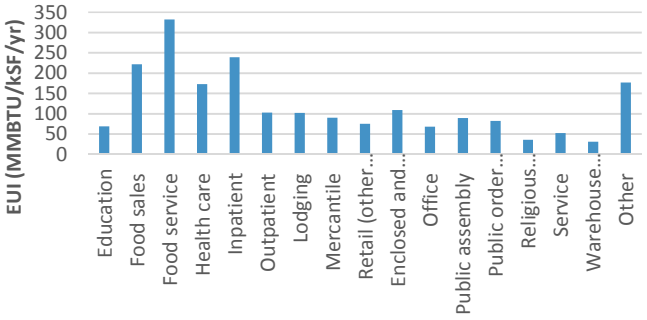
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Theater
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

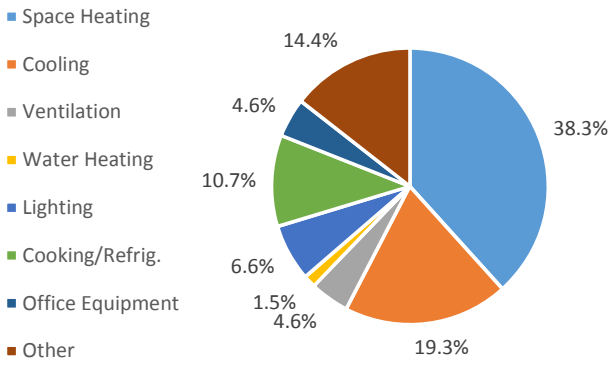


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: THEATER	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Theater



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Physical Education Building
Asset 2030

Inspected September 10, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

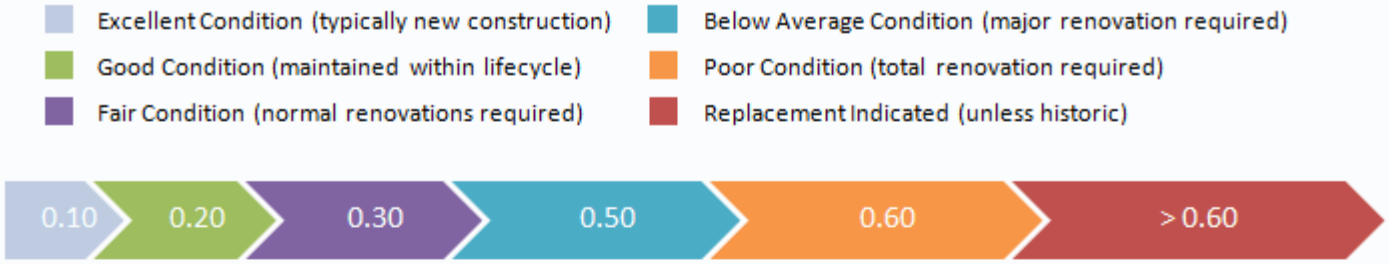
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

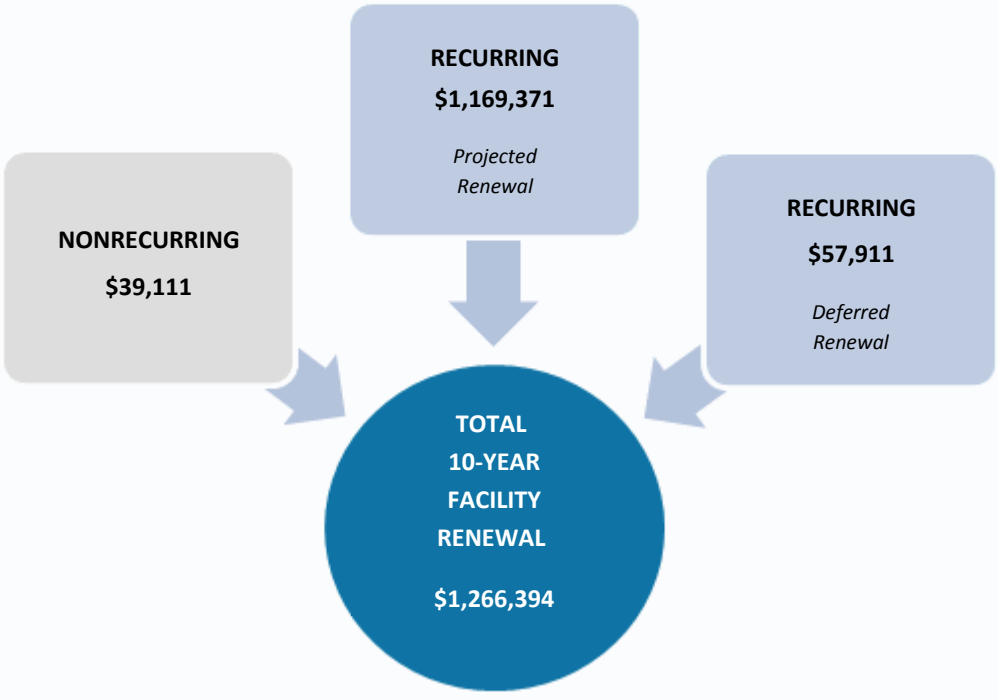
ASSET CODE	2030		
ASSET NAME	PHYSICAL EDUCATION BUILDING	**CURRENT REPLACEMENT VALUE**	$10,670,000
ASSET USE	Gymnasium / Athletics	**FACILITY CONDITION NEEDS INDEX**	0.12
YEAR BUILT	2004	**FACILITY CONDITION INDEX**	0.01
GSF	31,882	**10-YEAR $/SF**	39.72
INSPECTION DATE	09/10/2018		

FCNI Scale

The FCNI for this asset is **0.12**



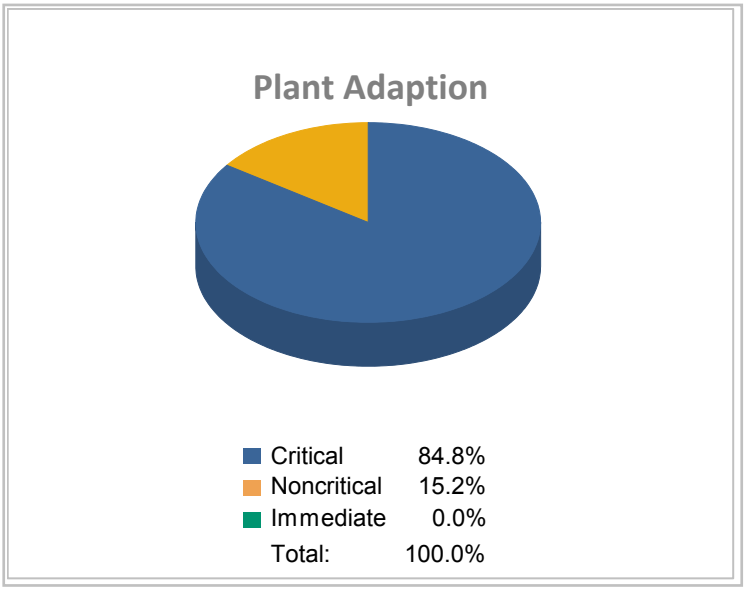
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

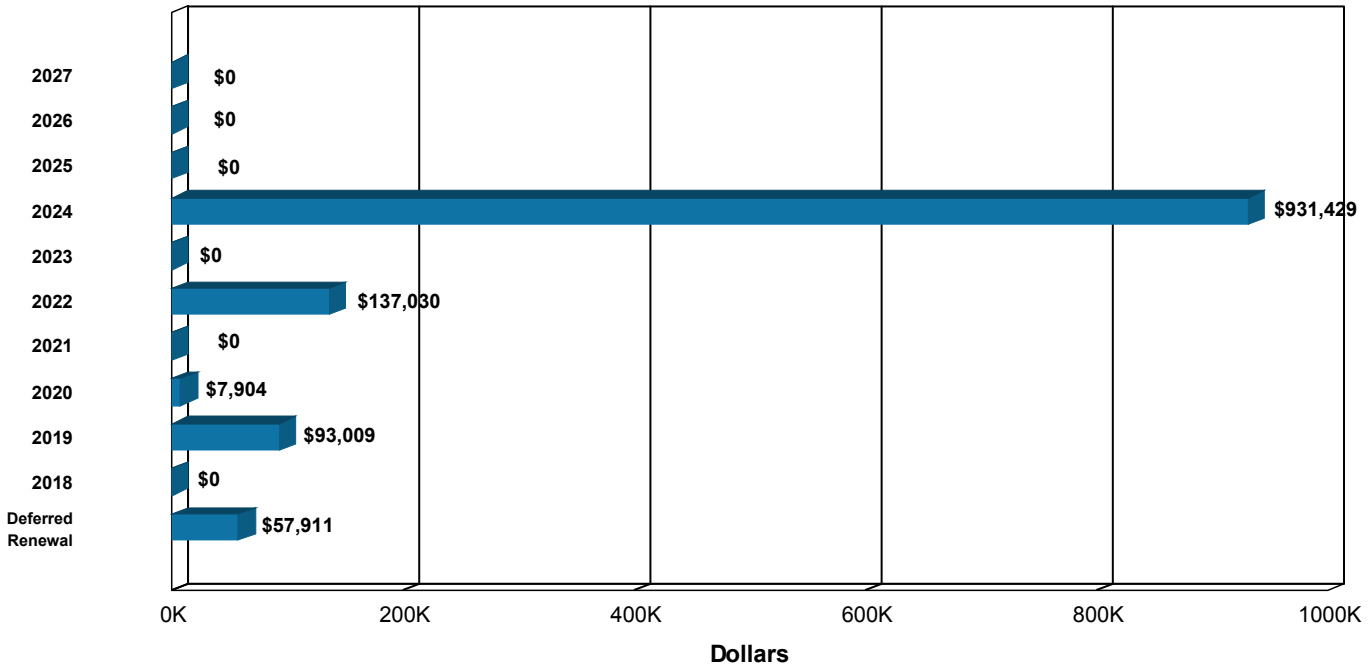
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$33,161**
3 - Noncritical	**$5,950**



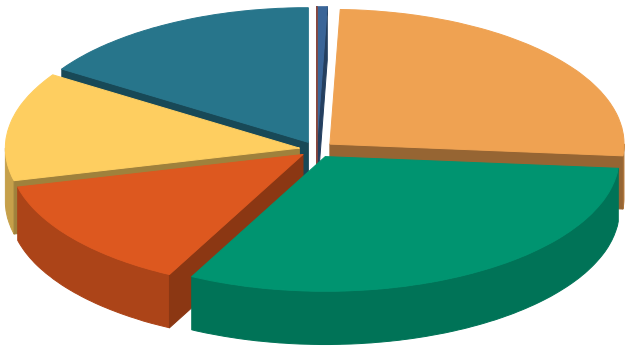
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$5,950	0%
Electrical	$327,092	26%
Exterior	$396,427	31%
Fire/Life Safety	$170,191	13%
Health	$0	0%
HVAC	$166,730	13%
Interiors	$199,231	16%
Plumbing	$773	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,266,394**	

ASSET SUMMARY

The Physical Education Building on the Portland Community College, Cascade campus is a two-story, 31,882 square foot athletic facility constructed in 2004. It provides facilities for student fitness and athletic activities, community events, and graduation ceremonies. The building has a basketball court with seating, weight rooms, an aerobics studio, and general exercise rooms. Locker rooms provide accommodation for both intramural and intercollegiate sports. The support area of the building has two stories and the entire structure has a flat roof and exterior walls of brick and metal siding.

Information for this report was gathered during a site visit conducted on September 10, 2018.

Site

The Physical Education Building is on the south side of North Killingsworth Street between North Borthwick Avenue and North Kerby Avenue. The site is flat and surrounded on the north, east, and west sides by concrete pedestrian city sidewalks and on the south side by campus sidewalks. A concrete campus sidewalk extends from North Kerby Avenue to the south doors and is in good condition. Landscaping includes lawn areas, ornamental planting, and trees, all of which are in good condition.

Exterior Structure

The roof is an asphaltic membrane and in acceptable condition for its apparent age. However, it is expected to reach the end of its anticipated lifecycle in the next ten years and is recommended for replacement. Two skylights over the second floor lobby appear to be in good condition and no work is recommended at this time. The exterior walls are brick veneer and corrugated metal siding, both of which are in good condition. Windows are metal-framed insulating glass that is also in good condition. Exterior doors are aluminum and glass storefront style and flush hollow-metal units. These doors should outlast the scope of this report, but their associated hardware may need to be upgraded in the near future.

Interior Finishes/Systems

Floor finishes include hardwood, athletic flooring, ceramic tile, carpet, epoxy, and polished, sealed concrete. The hardwood and ceramic tile finishes are in good condition with no recommendations. The carpet, epoxy floors, athletic flooring, and sealed concrete finishes will reach the end of their expected lifecycles in the next ten years and should be replaced or renewed. The interior walls are painted or finished with ceramic tile. The tile should last beyond the next ten years, but it is recommended that the painted walls be repainted within the next ten years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors, as well as the break room and reception casework, are in good condition and should outlast the scope of this report. The

telescoping bleachers are within their expected lifecycle and should not require any work in the next ten years.

Accessibility

This building was constructed in 2004 in compliance with accessibility requirements at that time. The entrances are at grade level and the main entrance has a powered door opener. The elevator has a compliant control panel and the door hardware and signage are compliant with accessibility standards. The restrooms provide the required accessible features and the locker rooms provide wheelchair accessible showers and other required accessible features. However, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The drinking fountain, which is otherwise compliant but missing required guards, should have cane guards or alcove walls added.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits appears to be adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This is an adequate application with no recommendations at this time.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room 132. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and a new panel was recently installed. However, the devices are believed to be original and will reach the end of their lifecycle within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

An Aaon rooftop package unit provides heating (natural gas) and cooling (R22 DX refrigerant). Distribution equipment consists of metal ductwork equipped with variable air volume (VAV) boxes and the controls are a digital application. The system appears to be well maintained and serviceable beyond the scope of this report. However, a control upgrade should be anticipated in the next few years based on age. Heating for the main gym is provided by suspended gas-fired unit heaters. These Reznor units are original and appear to be in adequate condition. Due to a short lifecycle, replacement should be scheduled within the next ten years. Facility exhaust is provided by rooftop centrifugal and inline centrifugal fans that serve restrooms, mechanical spaces, and general exhaust needs. The fans are in adequate condition and believed to be original with no recommendations at this time.

Electrical

Power is supplied to the facility from underground utilities at 480/277 volts from a transformer believed to be owned by the local utility. A main 1,200 amp switchboard in room 131 receives the power for distribution. It is in adequate condition and should continue to serve the facility beyond the scope of this report.

The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased and has substantial remaining service life.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures equipped with acrylic, parabolic, or no lenses. The fixtures are lamped with T8 fluorescent bulbs and additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting scheme appears to be well maintained and in good condition. However, replacement of the system over the next ten years should be scheduled due to lifecycle depletion.

The exterior lighting consists of eave-mounted fluorescent fixtures, wall-mounted HID fixtures, and wall-mounted LED fixtures. Additional lighting is provided by a bollard style fixture and lighting from the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, due to age some of the exterior lighting may need to be considered for replacement within the scope of this report.

Emergency power is provided by a Cummins, 50 kW diesel-fired generator that provides power at 480/277 volts. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears to be well maintained and in good condition.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the rooftop package unit supply fan and return fan. These original VFDs are approaching lifecycle depletion.

Plumbing

Domestic water is supplied through a copper piping network and drain piping is cast-iron with no hub connections and some plastic applications. The piping systems appeared to be in good condition with no reported issues. The systems have remaining service life beyond the scope of this report.

Domestic hot water is provided by four, A.O. Smith commercial-grade water heaters with tank capacities of 100 gallons each and heating capacities of 199 MBH. A small pump and expansion tank support the equipment. The domestic water heating equipment has remaining service life beyond the scope of this report.

The plumbing fixtures consists of drinking fountains, water closets, urinals, lavatories, showers, kitchen sinks, and utility sinks. The kitchen sinks will reach the end of their expected lifecycle in the next ten years and are recommended for replacement. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The facility has a two-stop, hydraulic passenger elevator with a rated car capacity of 4,500 pounds. The elevator is controlled and monitored by MCE solid state controls. The vertical transportation equipment appears to be well maintained and was operating properly on the day of inspection. The system should continue to serve the facility over the next ten years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

September 10, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	5,950	0	0	0	0	0	0	0	0	0	0	0	$5,950
EXTERIOR	0	0	0	13,763	0	0	0	0	0	0	382,664	0	0	0	$396,427
INTERIOR	0	0	0	0	0	71,033	0	0	0	0	128,198	0	0	0	$199,231
PLUMBING	0	0	0	0	0	0	0	0	0	0	773	0	0	0	$773
HVAC	0	0	0	44,148	0	18,343	0	0	0	0	104,240	0	0	0	$166,730
FIRE/LIFE SAFETY	0	33,161	0	0	0	0	0	0	137,030	0	0	0	0	0	$170,191
ELECTRICAL	0	0	0	0	0	3,633	7,904	0	0	0	315,555	0	0	0	$327,092
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$33,161	$5,950	$57,911	$0	$93,009	$7,904	$0	$137,030	$0	$931,429	$0	$0	$0	$1,266,394
TOTAL NONRECURRING PROJECT NEEDS			$39,111	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,227,282	

CURRENT REPLACEMENT VALUE	$10,670,000
FACILITY CONDITION NEEDS INDEX	0.12
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
31,882	$1,266,394	$39.72

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$5,950	$0	$5,950
EXTERIOR	$0	$396,427	$396,427
INTERIOR	$0	$199,231	$199,231
PLUMBING	$0	$773	$773
HVAC	$0	$166,730	$166,730
FIRE/LIFE SAFETY	$33,161	$137,030	$170,191
ELECTRICAL	$0	$327,092	$327,092
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$39,111**	**$1,227,282**	**$1,266,394**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2030FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	33,161
2030AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	5,950
				TOTAL	**$39,111**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2030	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	1,893
2030	DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			B2030	Deferred Renewal	4,748
2030	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	Deferred Renewal	7,122
2030	BA29	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - GYMNASIUM				D3060	Deferred Renewal	29,117
2030	BA52	HVAC CONTROLS - MAJOR INSTRUMENTATION - GYMNASIUM				D3060	Deferred Renewal	15,031
2030	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2019	46,247
2030	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2019	8,697
2030	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2019	16,089
2030	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002899	110	D3040	2019	3,057
2030	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002900	110	D3040	2019	3,057
2030	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002906	110	D3040	2019	3,057
2030	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002907	110	D3040	2019	3,057
2030	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002908	110	D3040	2019	3,057
2030	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002909	110	D3040	2019	3,057
2030	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AAON RET FAN	0000002852	ROOF	D5010	2019	3,633
2030	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	AAON SUP FAN	0000002851	ROOF	D5010	2020	7,904
2030	FA01	FIRE ALARM SYSTEM - DEVICES			132	D4030	2022	137,030

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2030	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			B2030	2024	6,770
2030	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			B2030	2024	27,081
2030	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2024	348,812
2030	IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE				C3020	2024	39,865
2030	IF17	FLOORING - ATHLETIC, RUBBER, TILE OR ROLL				C3020	2024	88,333
2030	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2024	773
2030	BA06	HVAC CONTROLS - TERMINAL ASSEMBLIES - GYMNASIUM				D3060	2024	104,240
2030	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			D5020	2024	2,034
2030	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2024	2,543
2030	LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	D5020	2024	1,316
2030	LI06	LIGHTING SYSTEM, INTERIOR - GYMNASIUM				D5020	2024	273,053
2030	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2024	36,609
							TOTAL	**$1,227,282**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2030FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$33,161
2	2030AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$5,950
		TOTAL FOR PLANT ADAPTION		**$39,111**
		GRAND TOTAL:		**$39,111**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	2030AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$5,950
				TOTAL FOR ACCESSIBILITY	**$5,950**
1	2030FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$33,161
				TOTAL FOR FIRE/LIFE SAFETY	**$33,161**
				GRAND TOTAL:	**$39,111**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	2030FS01	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/9/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	30	$304	$9,120	$488	$14,640	$23,760
Base Material/Labor Costs				**$9,120**		**$14,640**	
Indexed Material/Labor Costs				**$9,065**		**$14,757**	**$23,822**
Construction Mark Up at 20.0%							**$4,764**
Original Construction Cost							**$28,587**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$28,587**
Professional Fees at 16.0%							**$4,574**
TOTAL PROJECT COST							**$33,161**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	2030AC01	**Category Code:** AC3F	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/9/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.2	Not Applicable	Floor-wide: Floor(s) 1

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The drinking fountains, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
Base Material/Labor Costs				**$932**		**$3,321**	
Indexed Material/Labor Costs				**$927**		**$3,348**	**$4,275**
Construction Mark Up at 20.0%							**$855**
Original Construction Cost							**$5,130**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,130**
Professional Fees at 16.0%							**$821**
TOTAL PROJECT COST							**$5,950**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SF03	BLEACHER, TELESCOPING, ECON, UP TO 15 TIER, MANUAL				460	EA	1.00	$104,088	2004	25		2029
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				2,780	SF	1.12	$42,362	2004	30		2034
EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL				1,190	SF	1.12	$13,859	2004	30		2034
WN05	GLASS, STOREFRONT				2,340	SF	1.12	$330,374	2004	40		2044
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			6	LEAF	1.00	$18,133	2004	25		2029
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			4	LEAF	1.00	$8,026	2004	40		2044
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			2	LEAF	1.00	$4,013	2004	40		2044
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			4	EA	1.00	$27,081	2004	20		2024
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			1	EA	1.00	$6,770	2004	20		2024
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	1.00	$1,893	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			6	EA	1.00	$7,122	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			4	EA	1.00	$4,748	2004	12	1	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				20,000	SF	1.00	$348,812	2004	20		2024
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				80	SF	1.00	$22,894	2004	35		2039
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			30	LEAF	1.00	$66,343	2004	60		2064

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			8	LEAF	1.00	$29,348	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			6	LEAF	1.00	$22,011	2004	60		2064
DR04	DOOR, SLIDING SYSTEM, INTERIOR				2	EA	0.20	$7,360	2004	25		2029
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				30	EA	1.00	$22,587	2004	35		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				6	EA	1.00	$4,517	2004	35		2039
DR26	DOOR PANIC HARDWARE, INTERIOR				8	EA	1.00	$9,496	2004	30		2034
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS	34	LF	1.00	$19,070	2004	30		2034
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			RECEPTION	24	LF	1.00	$20,646	2004	40		2044
IW01	WALL FINISH - APPLIED, STANDARD				16,570	SF	1.00	$46,247	2004	12	3	2019
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,470	SF	1.00	$59,537	2004	60		2064
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				730	SF	1.00	$8,697	2004	12	3	2019
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				2,420	SF	1.00	$85,345	2004	40		2044
IF10	FLOORING - HARDWOOD STRIP, STANDARD				11,870	SF	1.00	$189,603	2004	50		2054
IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE				1,700	SF	1.00	$39,865	2004	20		2024
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				4,600	SF	1.00	$16,089	2004	10	5	2019

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF17	FLOORING - ATHLETIC, RUBBER, TILE OR ROLL				2,910	SF	1.00	$88,333	2004	20		2024
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				2,420	SF	1.00	$26,935	2004	45		2049
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				7,270	SF	1.00	$20,291	2004	24		2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	0000004388	216	1	EA	1.00	$257,984	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	SINGLE UNIT			1	EA	1.00	$2,694	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	RECESSED UNITS			5	EA	1.00	$13,470	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	1.00	$2,694	2004	25		2029
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				12	EA	1.00	$10,328	2004	25		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				12	EA	1.00	$16,214	2004	35		2039
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	2004	20		2024
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	2004	50		2054
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				26	EA	1.00	$29,579	2004	35		2039
FX10	PLUMBING FIXTURE - URINAL				6	EA	1.00	$6,472	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				18	EA	1.00	$30,509	2004	35		2039
PS06	SUPPLY PIPING SYSTEM - GYMNASIUM				31,882	SF	1.00	$159,949	2004	50		2054

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL	0000002863	202B	10	GAL	1.00	$1,008	2004	30		2034
WH06	WATER HEATER - COMMERCIAL, GAS (>613 MBH INPUT)	A.O. SMITH	0000002859	202B	1,999	MBH	1.00	$82,263	2004	25		2029
WH06	WATER HEATER - COMMERCIAL, GAS (>613 MBH INPUT)	A.O. SMITH	0000002860	202B	1,999	MBH	1.00	$82,263	2004	25		2029
WH06	WATER HEATER - COMMERCIAL, GAS (>613 MBH INPUT)	A.O. SMITH	0000002861	202B	1,999	MBH	1.00	$82,263	2004	25		2029
WH06	WATER HEATER - COMMERCIAL, GAS (>613 MBH INPUT)	A.O. SMITH	0000002862	202B	1,999	MBH	1.00	$82,263	2004	25		2029
PD06	DRAIN PIPING SYSTEM - GYMNASIUM				31,882	SF	1.00	$239,866	2004	60		2064
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-R.1	0000002858	ROOF	1	EA	1.00	$8,436	2004	25		2029
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-R.2	0000002857	ROOF	1	EA	1.00	$8,436	2004	25		2029
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-R.3	0000002855	ROOF	1	EA	1.00	$8,436	2004	25		2029
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-R.4	0000002856	ROOF	1	EA	1.00	$8,436	2004	25		2029
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EEF-1.1	0000002924	131	1	HP	1.00	$1,321	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	SEF-1.1	0000002896	110A	1	HP	1.00	$1,321	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EEF-2.1	0000002879	220A	1	HP	1.00	$1,321	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	DEF-1.1	0000002886	BDF	1	HP	1.00	$1,321	2004	35		2039
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002899	110	80	MBH	1.00	$3,057	2004	15		2019

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002900	110	80	MBH	1.00	$3,057	2004	15		2019
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002906	110	80	MBH	1.00	$3,057	2004	15		2019
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002907	110	80	MBH	1.00	$3,057	2004	15		2019
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002908	110	80	MBH	1.00	$3,057	2004	15		2019
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	0000002909	110	80	MBH	1.00	$3,057	2004	15		2019
HV06	HVAC DISTRIBUTION NETWORKS - GYMNASIUM				31,882	SF	1.00	$1,079,257	2004	45		2049
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006889	202B	1	HP	1.00	$1,693	2004	30		2034
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	AAON	0000006891	ROOF	40	TON	1.00	$265,723	2004	25		2029
BA06	HVAC CONTROLS - TERMINAL ASSEMBLIES - GYMNASIUM				31,882	SF	1.00	$104,240	2004	20		2024
BA29	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - GYMNASIUM				31,882	SF	1.00	$29,117	2004	10	3	DR
BA52	HVAC CONTROLS - MAJOR INSTRUMENTATION - GYMNASIUM				31,882	SF	1.00	$15,031	2004	10	3	DR
FS01	FIRE SPRINKLER SYSTEM - WET				31,882	SF	1.00	$431,320	2004	80		2084
FA01	FIRE ALARM SYSTEM - DEVICES			132	31,882	SF	1.00	$137,030	2004	18		2022
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		132	1	EA	1.00	$2,254	2016	18		2034
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		BDF	1	EA	1.00	$13,857	2010	18		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SE06	ELECTRICAL DISTRIBUTION NETWORK - GYMNASIUM				31,882	SF	1.00	$393,015	2004	50		2054
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)		0000002925	131	1,200	AMP	1.00	$89,981	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AAON RET FAN	0000002852	ROOF	5	HP	1.00	$3,633	2004	15		2019
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	AAON SUP FAN	0000002851	ROOF	20	HP	1.00	$7,904	2004	16		2020
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			4	EA	1.00	$2,034	2004	20		2024
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			5	EA	1.00	$2,543	2004	20		2024
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			8	EA	1.00	$6,173	2017	20		2037
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	1	EA	1.00	$1,316	2004	20		2024
LI06	LIGHTING SYSTEM, INTERIOR - GYMNASIUM				31,882	SF	1.00	$273,053	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				15,941	SF	1.00	$36,609	2004	20		2024
GN02	GENERATOR - DIESEL (<30-100KW)	CUMMINS	0000005651	SITE	50	KW	1.00	$48,829	2015	25		2040
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-1 PEB	0000002876	220A	70	AMP	1.00	$3,869	2015	25		2040
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-2 PEB	0000005650	203A	70	AMP	1.00	$3,869	2015	25		2040
								Grand Total:	**$5,837,801**			

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$1,893	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	6	EA	$7,122	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS	4	EA	$4,748	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - GYMNASIUM		31,882	SF	$15,031	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - GYMNASIUM		31,882	SF	$29,117	DR
				TOTAL DEFERRED RENEWAL COST	$57,911	

No Projected Component Replacement Cost for Asset No. 2030 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		730	SF	$8,958	2019
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		4,600	SF	$16,572	2019
C3010	WALL FINISH - APPLIED, STANDARD		16,570	SF	$47,634	2019
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	AAON RET FAN	5	HP	$3,742	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	80	MBH	$3,149	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	80	MBH	$3,149	2019

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	80	MBH	$3,149	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	80	MBH	$3,149	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	80	MBH	$3,149	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	REZNOR	80	MBH	$3,149	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$95,799**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	AAON SUP FAN	20	HP	$8,385	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$8,385**	

No Projected Component Replacement Cost for Asset No. 2030 for 2021

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES		31,882	SF	$154,228	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$154,228**	

No Projected Component Replacement Cost for Asset No. 2030 for 2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		20,000	SF	$416,500	2024
C3020	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE		1,700	SF	$47,601	2024
C3020	FLOORING - ATHLETIC, RUBBER, TILE OR ROLL		2,910	SF	$105,474	2024
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR	4	EA	$32,336	2024
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR	1	EA	$8,084	2024
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$922	2024
D5020	LIGHTING SYSTEM, INTERIOR - GYMNASIUM		31,882	SF	$326,040	2024
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		15,941	SF	$43,713	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	4	EA	$2,429	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	5	EA	$3,036	2024
D5020	COM EXTERIOR BOLLARD LIGHTING		1	EA	$1,571	2024
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - GYMNASIUM		31,882	SF	$124,468	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,112,175**	

No Projected Component Replacement Cost for Asset No. 2030 for 2025

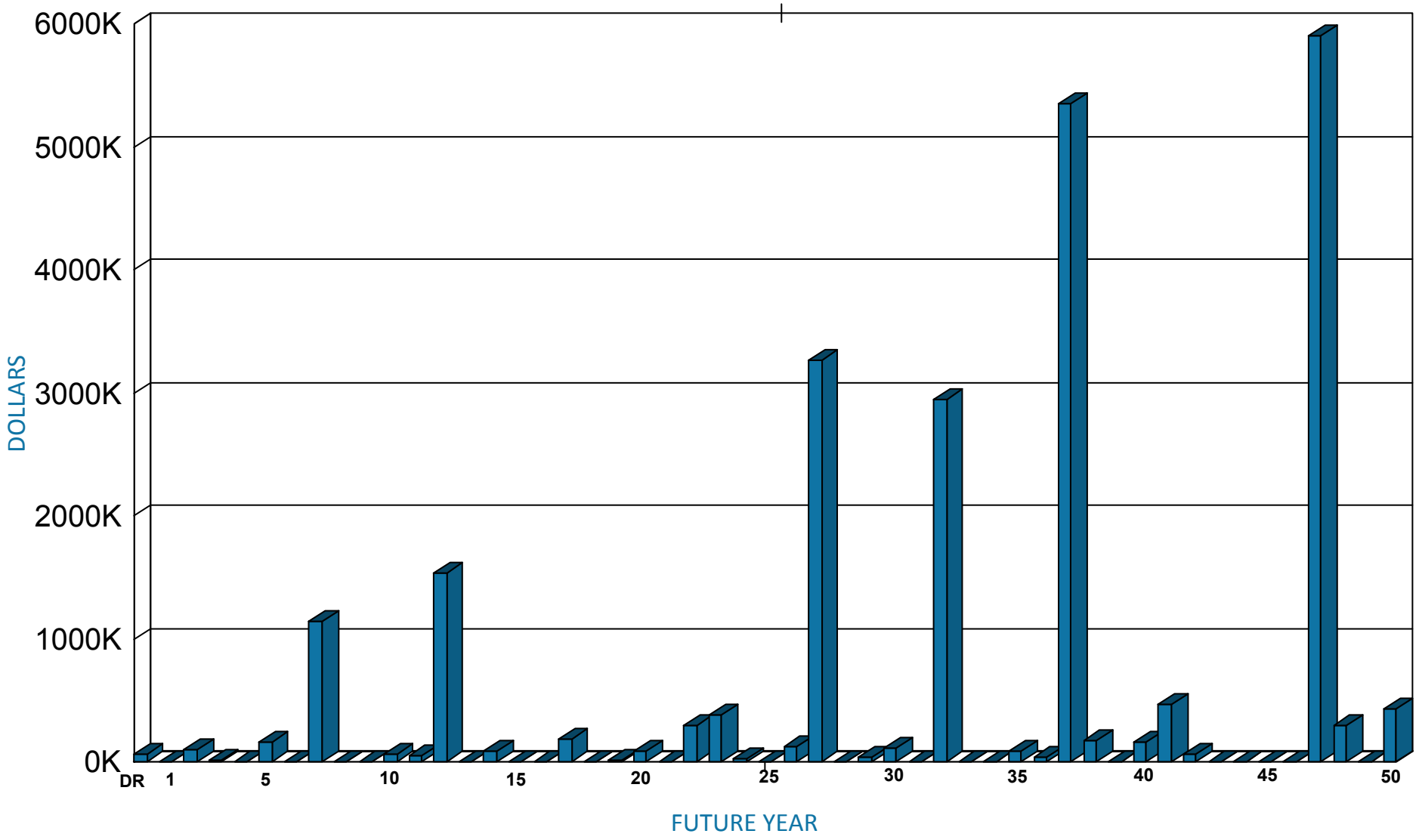
RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2030 for 2026

No Projected Component Replacement Cost for Asset No. 2030 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $5.80

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

AC01

PHYSICAL EDUCATION BUILDING

BLDG NO. 2030

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

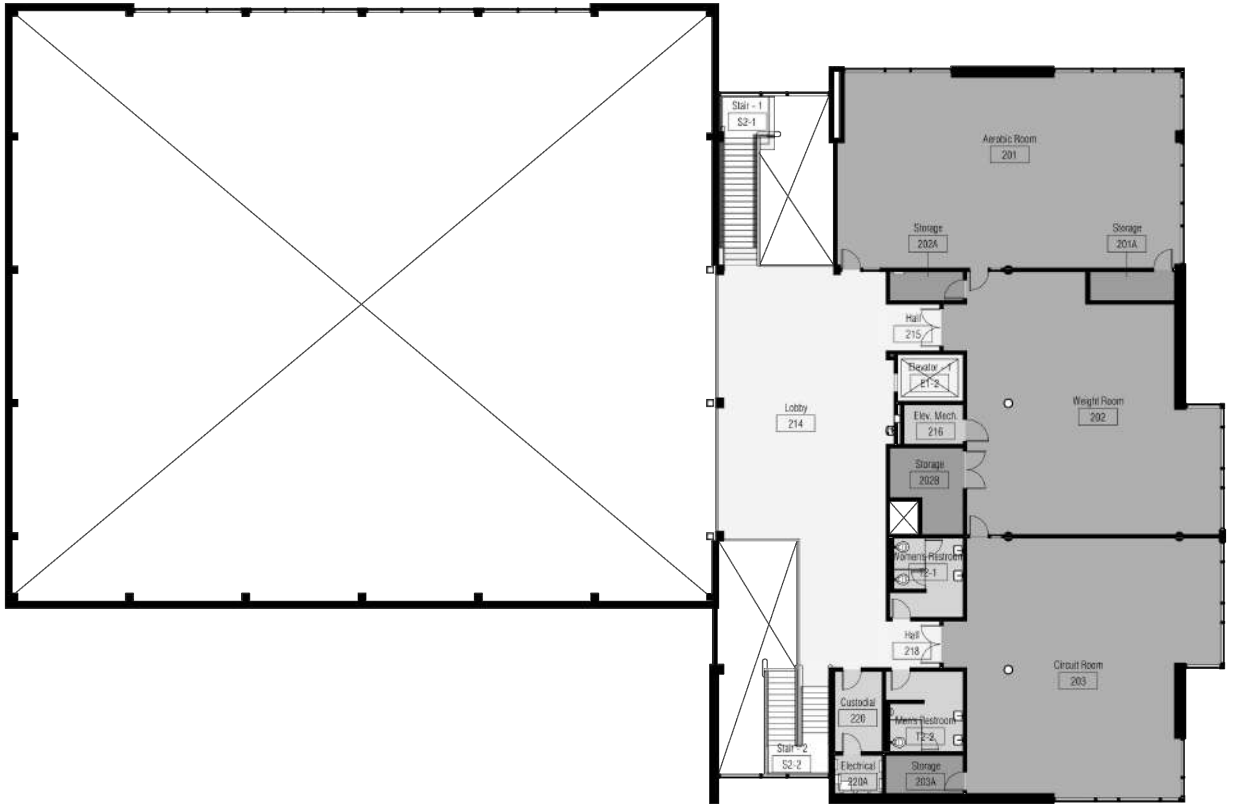
FIRST FLOOR PLAN

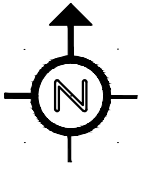
Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF

FS01





PHYSICAL EDUCATION BUILDING

BLDG NO. 2030

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018

Drawn by: A.W.

Project No. 18-064

SECOND FLOOR PLAN

Sheet No.

2 of 2

SECTION 6

PHOTOGRAPHS

2030001a 9/10/2018
Exterior finishes and site
Northwest elevation

2030001e 9/10/2018
Exhaust fans
Roof

2030002a 9/10/2018
Exterior finishes at the main entrance
North elevation

2030002e 9/10/2018
Exhaust fan
Roof

2030003a 9/10/2018
Exterior finishes and site
East elevation

2030003e 9/10/2018
Exhaust fan
Roof

2030004a 9/10/2018
Exterior finishes and site
South elevation

2030004e 9/10/2018
Exhaust fan
Roof

2030005a 9/10/2018
Exterior finishes at the south lobby entrance
South elevation

2030005e 9/10/2018
Rooftop HVAC package unit
Roof

2030006a 9/10/2018
Exterior finishes at the gymnasium
South elevation

2030006e 9/10/2018
Ductwork
Second floor, room 202B

2030007a 9/10/2018

Street side finishes and conditions

West elevation

2030007e 9/10/2018

Interior lighting

Second floor, room 202B

2030008a 9/10/2018

Typical glazing

West elevation

2030008e 9/10/2018

Water heaters

Second floor, room 202B

2030009a 9/10/2018

Exterior finishes and site

West elevation

2030009e 9/10/2018

Pump equipment

Second floor, room 202B

2030010a 9/10/2018

Exterior finishes at N Killingsworth Street

North elevation

2030010e 9/10/2018

Elevator controller and machine

Second floor, room 216

2030011a 9/10/2018

Accessible locker room entrance and accessible hardware and signage

Room T1-6

2030011e 9/10/2018

Fire extinguisher and electrical disconnect switch

Second floor, room 216

2030012a 9/10/2018

Accessible shower

Room T1-6

2030012e 9/10/2018

Automatic transfer switch and electrical disconnect switch

Second floor, room 203A

2030013a 9/10/2018
Lavatory, accessories, and finishes
Room T1-6

2030013e 9/10/2018
Transformer
Second floor, room 203A

2030014a 9/10/2018
Accessible water closet and accessories
Room T1-6

2030014e 9/10/2018
Panelboard
Second floor, room 203A

2030015a 9/10/2018
Drinking fountains
Lobby L1-2

2030015e 9/10/2018
Interior lighting
Second floor, room 203

2030016a 9/10/2018

Utility sink

Room 105A

2030016e 9/10/2018

Interior lighting

Second floor, room 203

2030017a 9/10/2018

Break room casework and sink

Room 105A

2030017e 9/10/2018

Automatic transfer switch and panelboard

Second floor, room 220A

2030018a 9/10/2018

Locker room finishes

Room 107

2030018e 9/10/2018

Panelboard

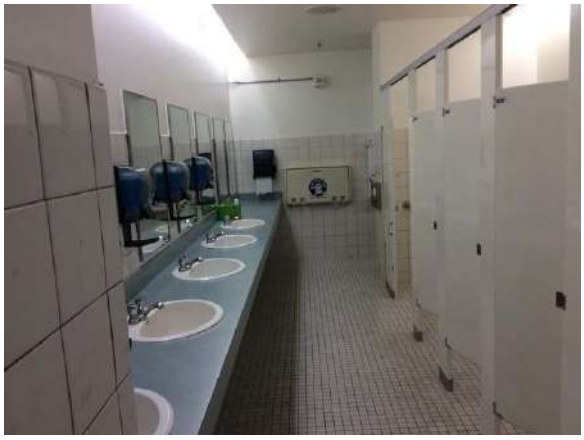
Second floor, room 220A

2030019a 9/10/2018
Accessible shower and area finishes
Room 107D

2030019e 9/10/2018
Strobe
Second floor, room T2-1

2030020a 9/10/2018
Lavatories and accessories
Room T1-2

2030020e 9/10/2018
Interior lighting
Second floor, room 202



2030021a 9/10/2018
Lavatories and toilet partitions
Room T1-2

2030021e 9/10/2018
Car operating panel
Elevator cab

2030022a 9/10/2018
Workroom casework and sink
Room 108

2030022e 9/10/2018
Interior lighting
Second floor, room 201

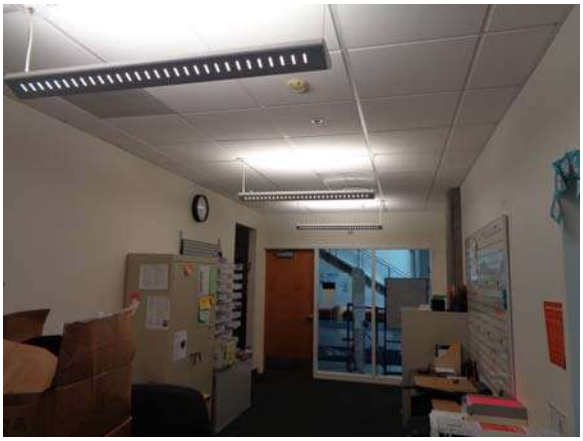
2030023a 9/10/2018
Training room finishes
Room 108

2030023e 9/10/2018
Electric heater
First floor, corridor

2030024a 9/10/2018
Showers and finishes
Room 109D

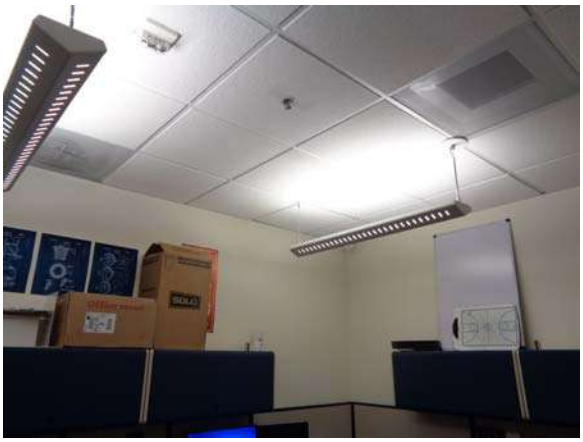
2030024e 9/10/2018
Occupancy sensor and interior lighting
First floor, restroom

2030025a 9/10/2018
Locker room finishes and entrance door
Room 109



2030025e 9/10/2018
Interior lighting
First floor, room 100

2030026a 9/10/2018
Drinking fountain
Room 109



2030026e 9/10/2018
Interior lighting
First floor, room 101

2030027a 9/10/2018
Urinals, screens, and toilet partitions
Room T1-3

2030027e 9/10/2018
Sink
First floor, room 105

2030028a 9/10/2018
Lavatories, accessories, and finishes
Room T1-3

2030028e 9/10/2018
Drain and supply piping
First floor, room 105

2030029a 9/10/2018
Accessible shower and area finishes
Room 109D

2030029e 9/10/2018
Annunciator
First floor, room L1-1

2030030a 9/10/2018
Gymnasium finishes
Room 110

2030030e 9/10/2018
VAV box
First floor, room 107

2030031a 9/10/2018

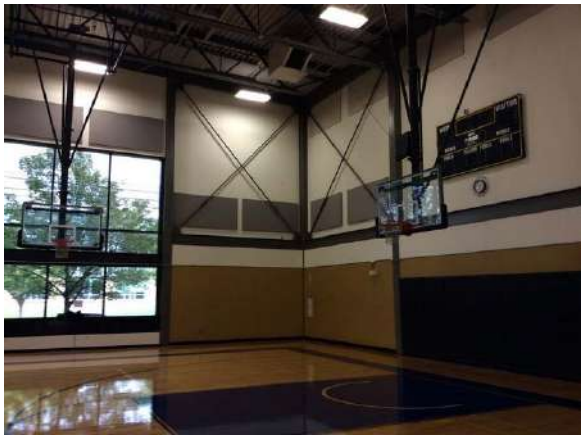
Gymnasium with weight room overlook

Room 110

2030031e 9/10/2018

Interior lighting

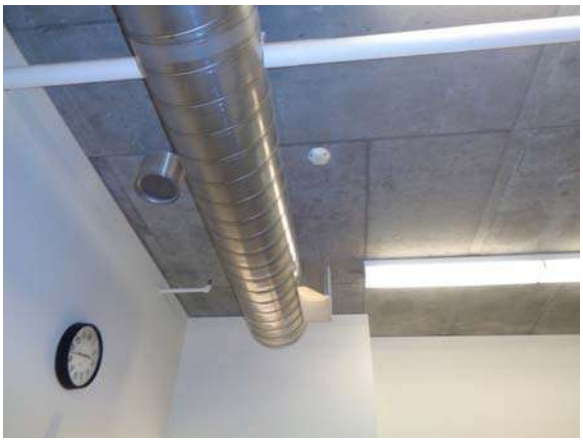
First floor, room 107



2030032a 9/10/2018

Gymnasium window wall

Room 110



2030032e 9/10/2018

Ductwork

First floor, room 107

2030033a 9/10/2018

Folding bleachers

Room 110

2030033e 9/10/2018

Occupancy sensor and interior lighting

First floor, room 107

2030034a 9/10/2018

Drinking fountains

Lobby L1-2

2030034e 9/10/2018

Interior lighting

First floor, room 108

2030035a 9/10/2018

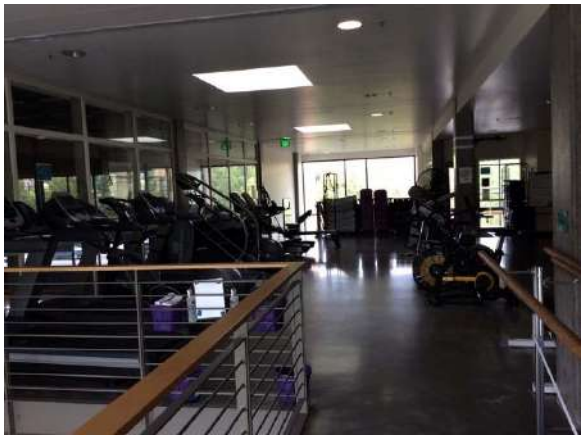
Sliding doors in the gym

Room 110

2030035e 9/10/2018

Panelboard

First floor, datacom room



2030036a 9/10/2018

Second floor workout area

Lobby 214

2030036e 9/10/2018

Wheelock panel

First floor, datacom room

2030037a 9/10/2018

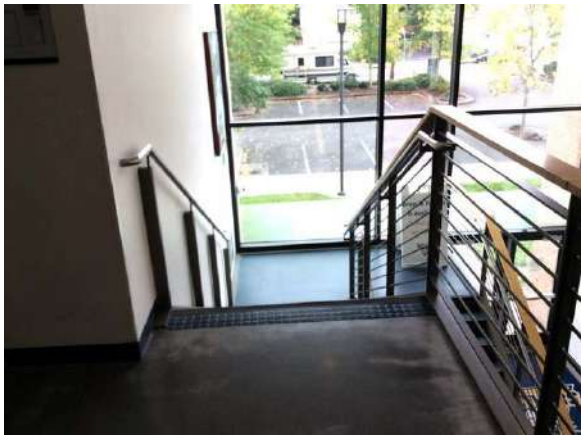
Stair with compliant railings

Stair S2-2

2030037e 9/10/2018

Time recorder panel

First floor, datacom room



2030038a 9/10/2018

Stair window wall

Stair S2-2

2030038e 9/10/2018

Unit heater

First floor, room 110

2030039a 9/10/2018

Roof membrane and low parapet with minimal fall protection

Roof

2030039e 9/10/2018

Interior lighting

First floor, room 110

2030040a 9/10/2018
Roof membrane and level change
Roof

2030040e 9/10/2018
Exhaust fan
First floor, room 110A

2030041a 9/10/2018
Skylights and mechanical screen wall
Roof

2030041e 9/10/2018
Exterior lighting
Site

2030042a 9/10/2018
Roof access and membrane condition
Roof

2030042e 9/10/2018
Exterior lighting
North elevation

2030043a 9/10/2018

Weight room finishes

Room 203

2030043e 9/10/2018

Exterior lighting

Building exterior

2030044a 9/10/2018

Weight room finishes

Room 202

2030044e 9/10/2018

Exterior lighting

South elevation

2030045a 9/10/2018

Weight room finishes

Room 202

2030045e 9/10/2018

Exterior lighting

Site

2030046a 9/10/2018

Urinal and area finishes

Room T2-2

2030046e 9/10/2018

Exterior lighting

Building exterior

2030047a 9/10/2018

Accessible water closet and accessories

Room T2-2

2030047e 9/10/2018

Fire alarm panel

First floor, room 132

2030048a 9/10/2018

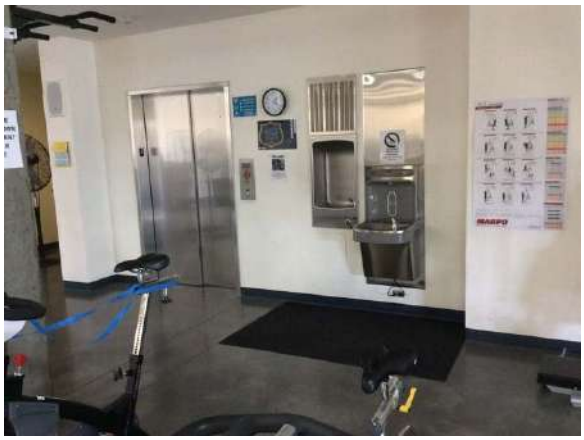
Restroom finishes, lavatories, and accessories

Room T2-2

2030048e 9/10/2018

Switchboard

First floor, room 131

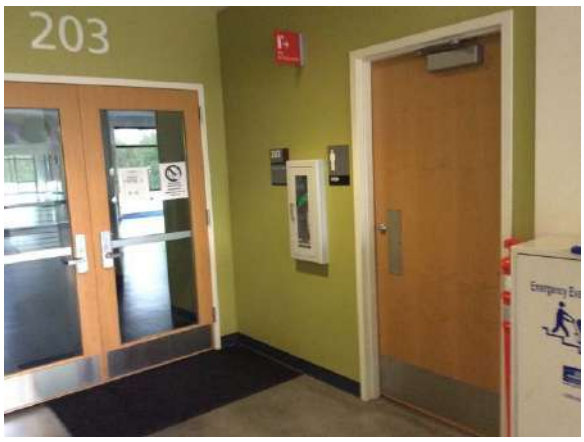


2030049a 9/10/2018
Elevator lobby and drinking fountains
Lobby 214

2030049e 9/10/2018
Panelboard
First floor, room 131

2030050a 9/10/2018
Aerobic studio finishes
Room 201

2030050e 9/10/2018
Analog thermostat
First floor, room 131



2030051a 9/10/2018
Doors with compliant hardware and signage
Lobby 214

2030051e 9/10/2018
Generator
Site

2030052a 9/10/2018

Utility sink

Room 220

2030052e 9/10/2018

Generator

Site

2030053a 9/10/2018

Accessible elevator control panel

Elevator

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2030
Asset Name	Physical Education Building
Year Built or Last Energy Renovation	2004

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

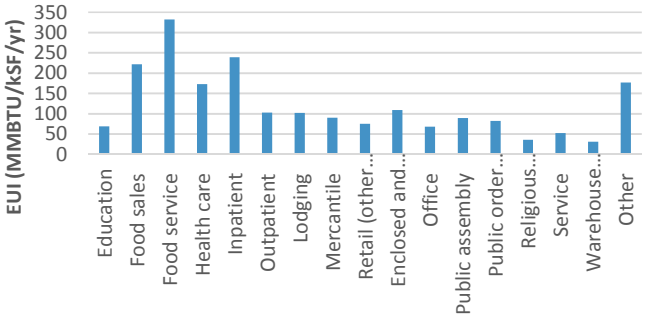
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Gymnasium
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

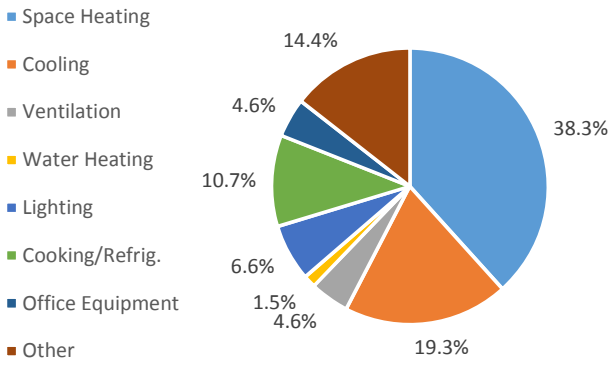


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: GYMNASIUM	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Gymnasium



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Public Service Education Building
Asset 2040

Inspected September 12, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

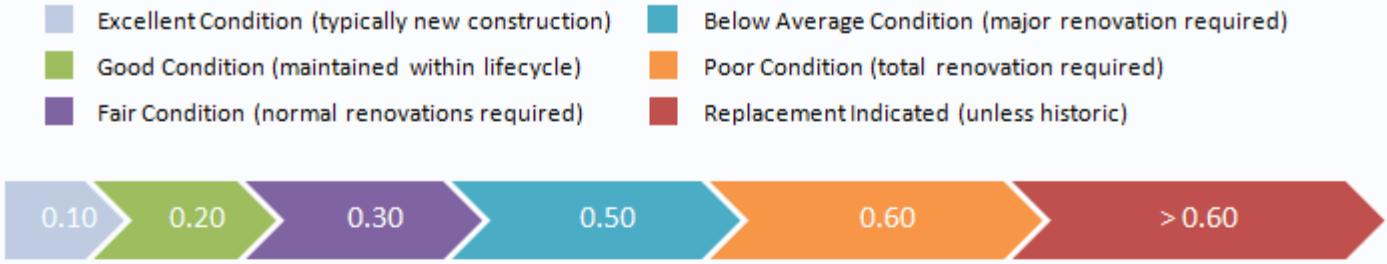
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

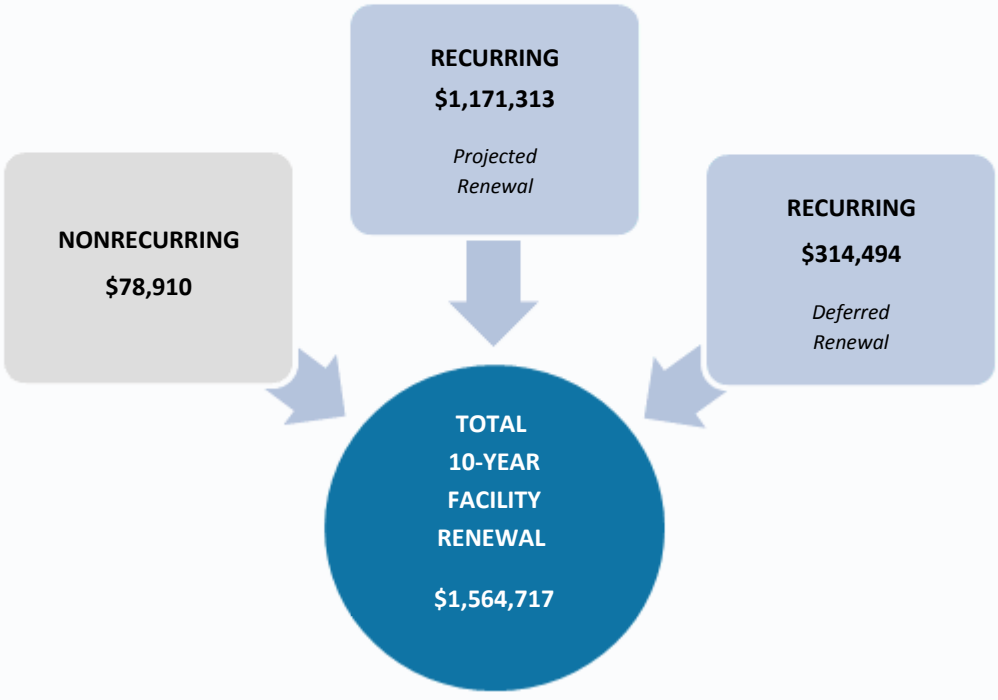
ASSET CODE	2040		
ASSET NAME	PUBLIC SERVICE EDUCATION BUILDING	**CURRENT REPLACEMENT VALUE**	$11,782,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.13
YEAR BUILT	2004	**FACILITY CONDITION INDEX**	0.03
GSF	28,400	**10-YEAR $/SF**	55.10
INSPECTION DATE	09/12/2018		

FCNI Scale

The FCNI for this asset is **0.13**



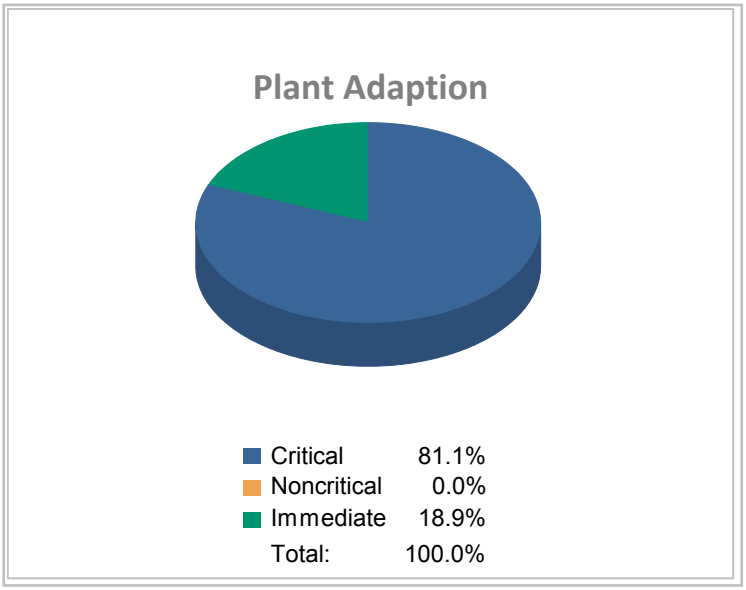
Total Facility Renewal Costs



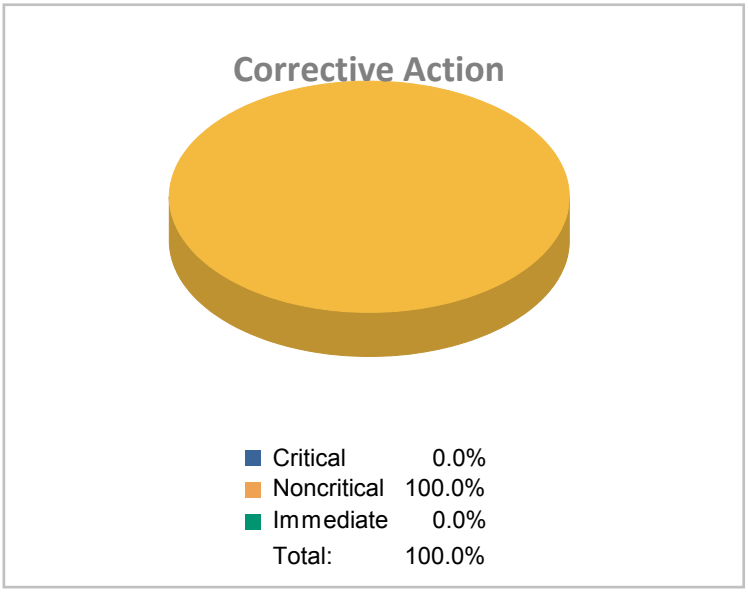
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$6,428**
2 - Critical	**$27,634**
3 - Noncritical	**$0**

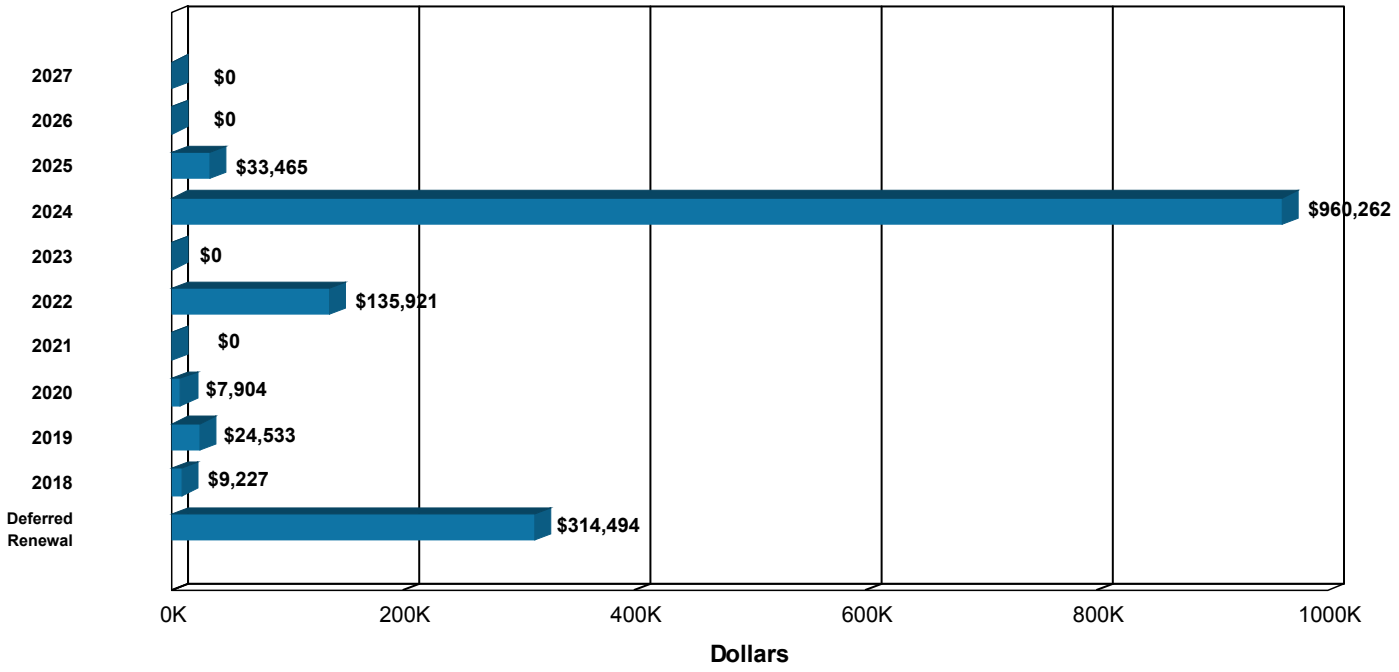


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$44,848**

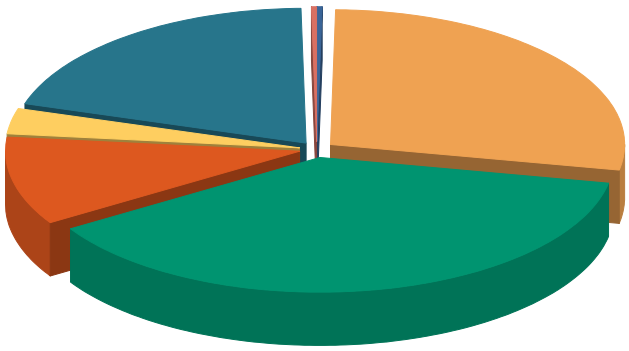


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$6,428	0%
Electrical	$432,888	28%
Exterior	$597,289	38%
Fire/Life Safety	$163,555	10%
Health	$0	0%
HVAC	$48,425	3%
Interiors	$309,816	20%
Plumbing	$6,315	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,564,717**	

ASSET SUMMARY

The Public Service Education Building is a 28,400 square-foot academic building which provides specialized and general-purpose classrooms. It houses offices and support spaces for the Fire Protection Technology and Emergency Medical Services programs and for the Cascade campus facility support functions. The structure was originally occupied by retail businesses and was converted in 2004 to its current use by Portland Community College. The single-story building has a flat roof and exterior walls of brick, stucco, metal siding, and painted concrete masonry. The Fire Protection Technology program has a multi-story drill tower for fire-fighting training and an apparatus bay for the fire trucks and ambulances used in the fire and EMS training programs.

Information for this report was gathered during a site visit conducted on September 12, 2018.

Site

The Public Service Education Building is on the south side of North Jesup Street between North Mississippi Avenue and North Michigan Avenue. An asphalt parking lot on the south side of the building serves this building and other campus facilities as well as provides access to the apparatus bays. The area in front of the apparatus bays and a loading and service area on the north side of the building are paved in concrete and in good condition. The site is flat and surrounded on the north, east, and west by concrete city sidewalks and on the south side by campus sidewalks. Landscaping includes lawn areas, ornamental planting, and trees, all in good condition.

Exterior Structure

The asphaltic-membrane roof is in acceptable condition for its apparent age, but is expected to reach the end of its anticipated lifecycle in the next ten years and is recommended for replacement. Exterior walls are painted stucco and concrete masonry, brick veneer, and a small area of corrugated metal siding. The paint is in average to poor condition and should be repainted within the next ten years. The metal siding and the brick veneer are in good condition. Windows are metal-framed insulating glass in good condition. The exterior doors are aluminum and glass storefront, flush hollow metal, and overhead sectional and coiling steel doors, all of which are in good condition. The drill tower has stairs with metal railings that are beginning to rust and should be repainted.

Interior Finishes/Systems

Floor finishes include sheet vinyl, carpet, and polished, sealed concrete. These finishes are relatively new and in good condition, but the carpet and concrete may still need to be replaced or renewed as they will reach the end of their expected lifecycle in the next ten years. The interior walls are painted in most areas with a small quantity of Fiberglass Reinforced Plastic (FRP) in the restrooms. The FRP should outlast the scope of this report, but it is recommended that the painted walls be repainted within the

next ten years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The doors and casework are also in good condition and no work is recommended.

Accessibility

This building was renovated in 2004 in compliance with accessibility requirements at that time. The south and east entrances are at grade level and the south entrance has a powered door opener. The door hardware and signage is compliant with accessibility standards and the restrooms provide the required accessible features. A few doors are missing the required signage and these should be provided in the course of normal building maintenance. Small locker rooms near the apparatus bay provide wheelchair accessible showers and other required accessible features. However, current accessibility and life safety legislation requires that stairs have handrails complying with specific grip profiles and continuing at least 12 inches beyond the top and bottom risers. Ramps are also required to have handrails on both sides meeting the same criteria. The stair on the north side of the building at the loading dock and the ramp leading up to the loading dock do not meet these criteria. To comply with the intent of this legislation, it is recommended that compliant handrails be installed at the loading dock steps and the loading dock ramp.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number and size of the exits appears adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room E1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to be original. It is approaching the end of its normal service life and should be scheduled for replacement. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two Aaon rooftop package units provide natural gas heating and cooling with R22 DX refrigerant. Distribution equipment consists of metal ductwork equipped with variable air volume (VAV) boxes and the controls are a digital application. The system appears to be well maintained and serviceable beyond the scope of this report. However, a partial control upgrade should be anticipated due to a short lifecycle. Cooling is also provided by a split system in an IT room. The circa 2004 unit was not in operation on the day of inspection. It is in disrepair and recommended for replacement. Heating is also provided by two, Modine ceiling-mounted unit heaters. The units are in adequate condition but will reach lifecycle depletion within the scope of this report.

Facility exhaust is provided by rooftop centrifugal fans, a wall-mounted centrifugal fan, and a rooftop utility set type fan. These fans serve restrooms, mechanical spaces, and general exhaust needs. They are in adequate condition with no recommendations.

Electrical

Power is supplied to the facility from underground utilities at 480/277 volts from a transformer believed to be owned by the local utility. An 800 amp main panelboard in the electrical room receives the power for distribution. In adequate condition, the switchboard should continue to serve the facility over the scope of this report.

The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked, properly encased, and has substantial remaining service life.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures equipped with acrylic, mesh screen, or no lenses. The lighting is lamped with T8 fluorescent bulbs and additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. However, replacement over the next ten years may need to be considered based on age.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted fixtures and lighting from the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. Due to age, some of the exterior lighting may need to be considered for replacement within the scope of this report.

Emergency power is provided by a Cummins diesel-fired generator that provides power at 480/277 volts and has a rated capacity of 50 kW. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears to be well maintained, in good condition and should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the rooftop package unit supply fans and exhaust fans. They are believed to be original and are approaching lifecycle depletion.

Plumbing

Domestic water is supplied through a copper piping network. A backflow preventer on the domestic water supply prevents cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems are in good condition and no issues were reported. However, the backflow preventer will reach the end of its service life in the new few years and may need to be considered for replacement.

Domestic hot water is provided by an A.O. Smith, commercial-grade gas-fired water heater with a tank capacity of 71 gallons and a heating capacity of 120 MBH. A small pump and expansion tank support the equipment. Additionally, an instantaneous water heater serves a sink in the break room. While the commercial unit should outlast the scope of this report, the instantaneous unit has reached the end of its normal lifecycle and should be replaced.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, showers, kitchen sinks, and utility sinks. The kitchen sinks will reach the end of their expected lifecycle in the next ten years and are recommended for replacement. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

September 12, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	6,428	0	0	0	0	0	0	0	0	0	0	0	0	0	$6,428
EXTERIOR	0	0	44,848	19,583	0	0	0	0	0	0	532,859	0	0	0	$597,289
INTERIOR	0	0	0	293,921	0	15,895	0	0	0	0	0	0	0	0	$309,816
PLUMBING	0	0	0	990	0	0	0	0	0	0	5,325	0	0	0	$6,315
HVAC	0	0	0	0	9,227	5,732	0	0	0	0	0	33,465	0	0	$48,425
FIRE/LIFE SAFETY	0	27,634	0	0	0	0	0	0	135,921	0	0	0	0	0	$163,555
ELECTRICAL	0	0	0	0	0	2,906	7,904	0	0	0	422,078	0	0	0	$432,888
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$6,428	$27,634	$44,848	$314,494	$9,227	$24,533	$7,904	$0	$135,921	$0	$960,262	$33,465	$0	$0	$1,564,717
TOTAL NONRECURRING PROJECT NEEDS			$78,910	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,485,807	

CURRENT REPLACEMENT VALUE	$11,782,000
FACILITY CONDITION NEEDS INDEX	0.13
FACILITY CONDITION INDEX	0.03

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
28,400	$1,564,717	$55.10

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$6,428	$0	$6,428
EXTERIOR	$44,848	$552,441	$597,289
INTERIOR	$0	$309,816	$309,816
PLUMBING	$0	$6,315	$6,315
HVAC	$0	$48,425	$48,425
FIRE/LIFE SAFETY	$27,634	$135,921	$163,555
ELECTRICAL	$0	$432,888	$432,888
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$78,910**	**$1,485,807**	**$1,564,717**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2040AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	6,428
2040FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	27,634
2040ES01	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	44,848
				TOTAL	**$78,910**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2040	EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD	STAIR RAILINGS		DRILL TOWER	B2010	Deferred Renewal	10,102
2040	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	4,732
2040	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	4,748
2040	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	117,976
2040	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	Deferred Renewal	156,184
2040	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	19,762
2040	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		114A	D2020	Deferred Renewal	990
2040	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AC-1	0000003604	ROOF	D3030	2018	4,580
2040	HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AC-1	0000004100	BDF1-01	D3030	2018	4,648
2040	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2019	15,895
2040	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	MODINE	0000003608	105	D3040	2019	2,866
2040	HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	MODINE	0000003609	105	D3040	2019	2,866
2040	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU EX FAN	0000004099	ROOF	D5010	2019	2,906
2040	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	AFU SUP FAN	0000004098	ROOF	D5010	2020	7,904
2040	FA01	FIRE ALARM SYSTEM - DEVICES			E1-01	D4030	2022	122,064
2040	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		E1-01	D4030	2022	13,857
2040	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			B2030	2024	27,081

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2040	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2024	505,777
2040	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2024	3,090
2040	BF02	BACKFLOW PREVENTER (1-2 INCHES)	DOM WTR	0000003627	M1-01	D2020	2024	2,235
2040	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2024	6,103
2040	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	2024	3,858
2040	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2024	7,509
2040	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				D5020	2024	371,998
2040	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2024	32,611
2040	BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				D3060	2025	22,170
2040	BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				D3060	2025	11,295
							TOTAL	**$1,485,807**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
3	2040ES01	EXTERIOR WALL FINISH RENEWAL	3	$44,848
		TOTAL FOR CORRECTIVE ACTION		**$44,848**

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2040AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	1	$6,428
2	2040FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$27,634
		TOTAL FOR PLANT ADAPTION		**$34,062**
		GRAND TOTAL:		**$78,910**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	2040AC01	1	Plant Adaption	BUILDING ENTRY ACCESSIBILITY UPGRADES	$6,428
				TOTAL FOR ACCESSIBILITY	**$6,428**
3	2040ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$44,848
				TOTAL FOR EXTERIOR	**$44,848**
2	2040FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$27,634
				TOTAL FOR FIRE/LIFE SAFETY	**$27,634**
				GRAND TOTAL:	**$78,910**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

BUILDING ENTRY ACCESSIBILITY UPGRADES

Project Number:	2040AC01	**Category Code:** AC2A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	12/9/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 505	Not Applicable	Item Only: Floor(s) 1

Description

Current accessibility and life safety legislation requires that stairs have handrails complying with specific grip profiles and continuing at least 12 inches beyond the top and bottom risers. Ramps are also required to have handrails on both sides meeting the same criteria. The stair on the north side of the building at the loading dock and the ramp leading up to the loading dock do not meet these criteria. To comply with the intent of this legislation, it is recommended that compliant handrails be installed at the loading dock steps and the loading dock ramp.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted	LF	15	$116	$1,741	$191	$2,865	$4,606
Base Material/Labor Costs				**$1,741**		**$2,865**	
Indexed Material/Labor Costs				**$1,730**		**$2,888**	**$4,618**
Construction Mark Up at 20.0%							**$924**
Original Construction Cost							**$5,542**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,542**
Professional Fees at 16.0%							**$887**
TOTAL PROJECT COST							**$6,428**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	2040FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/9/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	25	$304	$7,600	$488	$12,200	$19,800
Base Material/Labor Costs				**$7,600**		**$12,200**	
Indexed Material/Labor Costs				**$7,554**		**$12,298**	**$19,852**
Construction Mark Up at 20.0%							**$3,970**
Original Construction Cost							**$23,822**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$23,822**
Professional Fees at 16.0%							**$3,812**
TOTAL PROJECT COST							**$27,634**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	2040ES01	**Category Code:** ES2B	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	12/9/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

Most of the exterior walls are painted concrete masonry or stucco. The paint is in average to poor condition and should be repainted within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	12,480	$0.64	$7,987	$1.93	$24,086	$32,074
Base Material/Labor Costs				**$7,987**		**$24,086**	
Indexed Material/Labor Costs				**$7,939**		**$24,279**	**$32,218**
Construction Mark Up at 20.0%							**$6,444**
Original Construction Cost							**$38,662**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$38,662**
Professional Fees at 16.0%							**$6,186**
TOTAL PROJECT COST							**$44,848**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD	STAIR RAILINGS		DRILL TOWER	3,600	SF	1.00	$10,102	2004	12		DR
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				610	SF	1.12	$8,218	2004	30		2034
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				770	SF	1.12	$11,733	2004	30		2034
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				770	SF	1.12	$1,773	2004	30		2034
WN05	GLASS, STOREFRONT				1,700	SF	1.12	$240,016	2004	40		2044
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				4	LEAF	1.00	$12,089	2004	25		2029
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				5	LEAF	1.00	$10,033	2004	40		2044
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	METAL & GLASS SECTIONAL			384	SF	1.00	$40,009	2004	30		2034
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				80	SF	1.00	$8,335	2004	30		2034
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			2	EA	1.00	$13,541	2010	20		2030
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			4	EA	1.00	$27,081	2004	20		2024
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				5	EA	1.00	$10,473	2004	30		2034
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				5	EA	1.00	$4,732	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				4	EA	1.00	$4,748	2004	12	1	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				29,000	SF	1.00	$505,777	2004	20		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				30	LEAF	1.00	$66,343	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			20	LEAF	1.00	$73,371	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			20	LEAF	1.00	$73,371	2004	60		2064
DR03	DOOR - OVERHEAD, INTERIOR				64	SF	1.00	$6,668	2004	45		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			30	EA	1.00	$22,587	2004	35		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			20	EA	1.00	$15,058	2004	35		2039
DR26	DOOR PANIC HARDWARE, INTERIOR				20	EA	1.00	$23,739	2004	30		2034
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				150	LF	1.00	$84,132	2004	30		2034
IW01	WALL FINISH - APPLIED, STANDARD				42,270	SF	1.00	$117,976	2004	12	1	DR
IW09	WALL FINISH - WALL COVERING, ROLL	FRP			430	SF	1.00	$2,452	2004	20	10	2034
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				13,110	SF	1.00	$156,184	2004	12	1	DR
IF04	FLOORING - VINYL SHEET, STANDARD				1,410	SF	1.00	$15,895	2004	15		2019
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				5,650	SF	1.00	$19,762	2004	10	3	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				13,110	SF	1.00	$145,917	2004	45		2049
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				2,020	SF	1.00	$5,638	2004	24		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	1.00	$2,694	2004	25		2029
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				8	EA	1.00	$6,885	2004	25		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				2	EA	1.00	$2,702	2004	35		2039
FX04	PLUMBING FIXTURE - SINK, KITCHEN				4	EA	1.00	$3,090	2004	20		2024
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	2004	50		2054
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				4	EA	1.00	$4,551	2004	35		2039
FX10	PLUMBING FIXTURE - URINAL				2	EA	1.00	$2,157	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				10	EA	1.00	$16,950	2004	35		2039
BF02	BACKFLOW PREVENTER (1-2 INCHES)	DOM WTR	0000003627	M1-01	1	EA	1.00	$2,235	2004	20		2024
PS14	SUPPLY PIPING SYSTEM - OFFICE				28,400	SF	1.00	$117,497	2004	50		2054
TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL	0000003715	M1-01	10	GAL	1.00	$1,008	2004	30		2034
WH02	WATER HEATER - COMMERCIAL, GAS (<87-168 MBH INPUT)	AO SMITH	0000005912	M1-01	120	MBH	1.00	$11,201	2010	25		2035
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		114A	1	EA	1.00	$990	2004	10	3	DR
PD14	DRAIN PIPING SYSTEM - OFFICE				28,400	SF	1.00	$175,746	2004	60		2064
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AC-1	0000003604	ROOF	2	TON	1.00	$4,580	2004	25	-11	2018

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AC-1	0000004100	BDF1-01	2	TON	1.00	$4,648	2004	30	-16	2018
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000003606	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000003601	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000003536	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000003602	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000003603	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	0000003533	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-7	0000003534	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-8	0000003537	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	LOREN COOK	0000003638	WALL-MOUNT	1	EA	1.00	$3,773	2004	25		2029
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	DSP MONOXIVENT	0000003535	ROOF	2	HP	1.00	$8,073	2004	40		2044
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	MODINE	0000003608	105	75	MBH	1.00	$2,866	2004	15		2019
HU26	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	MODINE	0000003609	105	75	MBH	1.00	$2,866	2004	15		2019
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE				28,400	SF	1.00	$816,461	2004	45		2049
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT		M1-01	1	HP	1.00	$1,693	2004	30		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU37	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (9-35 TON)	RTU-1	0000002400	ROOF	5	TON	1.00	$33,925	2004	25		2029
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	AHU-1	0000003605	ROOF	40	TON	1.00	$265,723	2004	25		2029
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE				28,400	SF	1.00	$78,641	2015	20		2035
BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				28,400	SF	1.00	$22,170	2015	10		2025
BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				28,400	SF	1.00	$11,295	2015	10		2025
FS01	FIRE SPRINKLER SYSTEM - WET				28,400	SF	1.00	$384,213	2004	80		2084
FA01	FIRE ALARM SYSTEM - DEVICES			E1-01	28,400	SF	1.00	$122,064	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		E1-01	1	EA	1.00	$13,857	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		BDF1-01	1	EA	1.00	$13,857	2010	18		2028
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE				28,400	SF	1.00	$629,053	2004	50		2054
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	PCC	0000003636	E1-01	800	AMP	0.15	$8,741	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU EX FAN	0000004099	ROOF	4	HP	1.00	$2,906	2004	15		2019
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	AFU SUP FAN	0000004098	ROOF	20	HP	1.00	$7,904	2004	16		2020
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			12	EA	1.00	$6,103	2004	20		2024
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			5	EA	1.00	$3,858	2004	20		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			6	EA	1.00	$4,630	2015	20		2035
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	6	EA	1.00	$11,686	2004	40		2044
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	6	EA	1.00	$7,509	2004	20		2024
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				28,400	SF	1.00	$371,998	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				14,200	SF	1.00	$32,611	2004	20		2024
GN02	GENERATOR - DIESEL (<30-100KW)	CUMMINS	0000005653	G1-01	50	KW	1.00	$48,829	2015	25		2040
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-1	0000001958	E1-01	100	AMP	1.00	$5,527	2004	25		2029
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-2 PSEB	0000005652	E1-01	150	AMP	1.00	$5,956	2015	25		2040
							Grand Total:	**$5,058,648**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	EXTERIOR SURFACE FINISH - APPLIED, STANDARD	STAIR RAILINGS	3,600	SF	$10,102	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		5	EA	$4,732	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		4	EA	$4,748	DR
C3010	WALL FINISH - APPLIED, STANDARD		42,270	SF	$117,976	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		13,110	SF	$156,184	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		5,650	SF	$19,762	DR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$990	DR
				TOTAL DEFERRED RENEWAL COST	$314,494	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AC-1	2	TON	$4,580	2018
D3030	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	AC-1	2	TON	$4,648	2018
	2018	PROJECTED COMPONENT REPLACEMENT COST			$9,227	

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - VINYL SHEET, STANDARD		1,410	SF	$16,372	2019
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU EX FAN	4	HP	$2,994	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	MODINE	75	MBH	$2,952	2019
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (40-100 MBH)	MODINE	75	MBH	$2,952	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$25,269**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	AFU SUP FAN	20	HP	$8,385	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$8,385**	

No Projected Component Replacement Cost for Asset No. 2040 for 2021

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$15,596	2022
D4030	FIRE ALARM SYSTEM - DEVICES		28,400	SF	$137,384	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$152,980**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2040 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		29,000	SF	$603,925	2024
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS	4	EA	$32,336	2024
D2010	PLUMBING FIXTURE - SINK, KITCHEN		4	EA	$3,690	2024
D5020	LIGHTING SYSTEM, INTERIOR - OFFICE		28,400	SF	$444,185	2024
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		14,200	SF	$38,939	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	12	EA	$7,287	2024
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		6	EA	$8,966	2024
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	5	EA	$4,607	2024
D2020	BACKFLOW PREVENTER (1-2 INCHES)	DOM WTR	1	EA	$2,668	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,146,603**	

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE		28,400	SF	$13,892	2025
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE		28,400	SF	$27,266	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$41,158**	

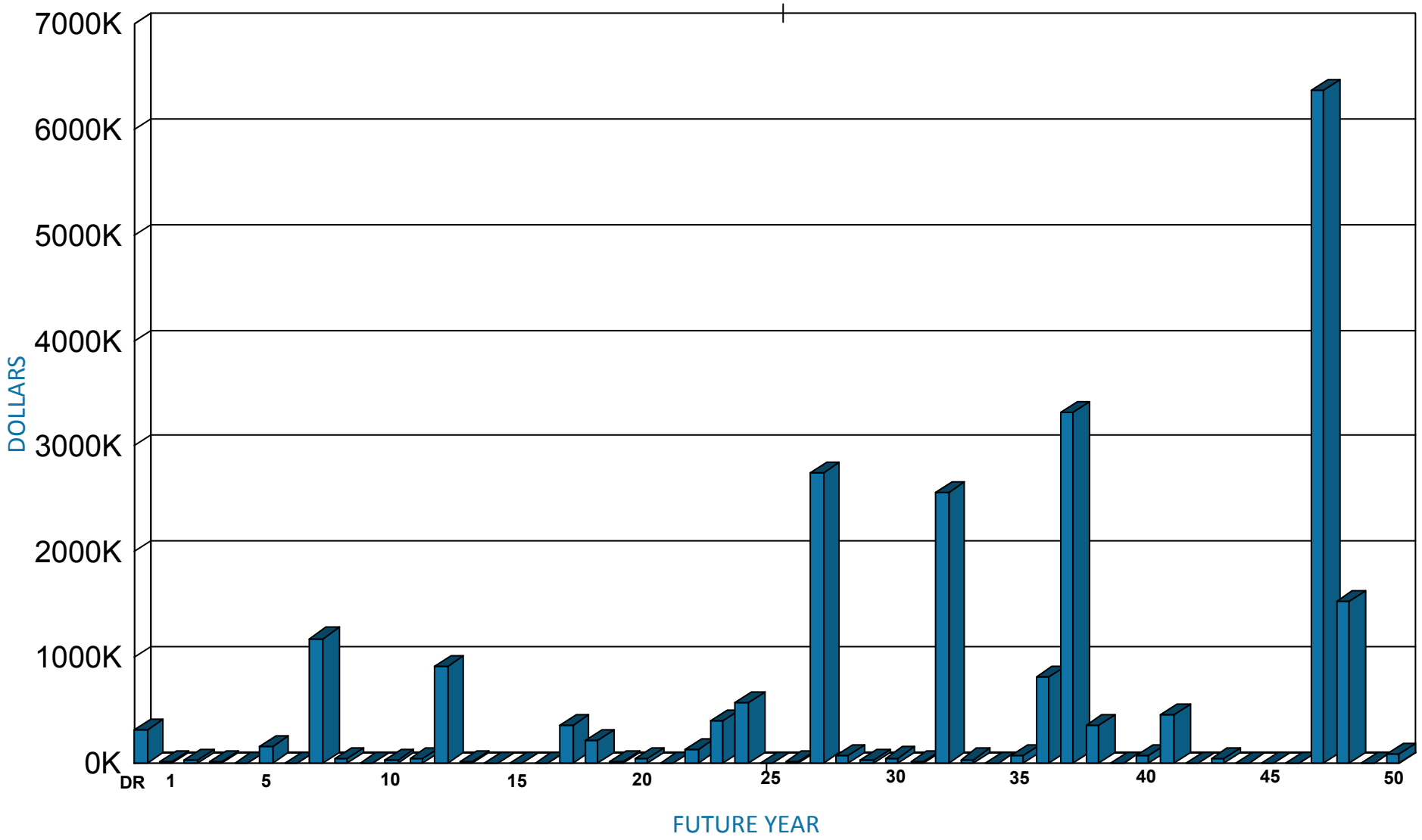
RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2040 for 2026

No Projected Component Replacement Cost for Asset No. 2040 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



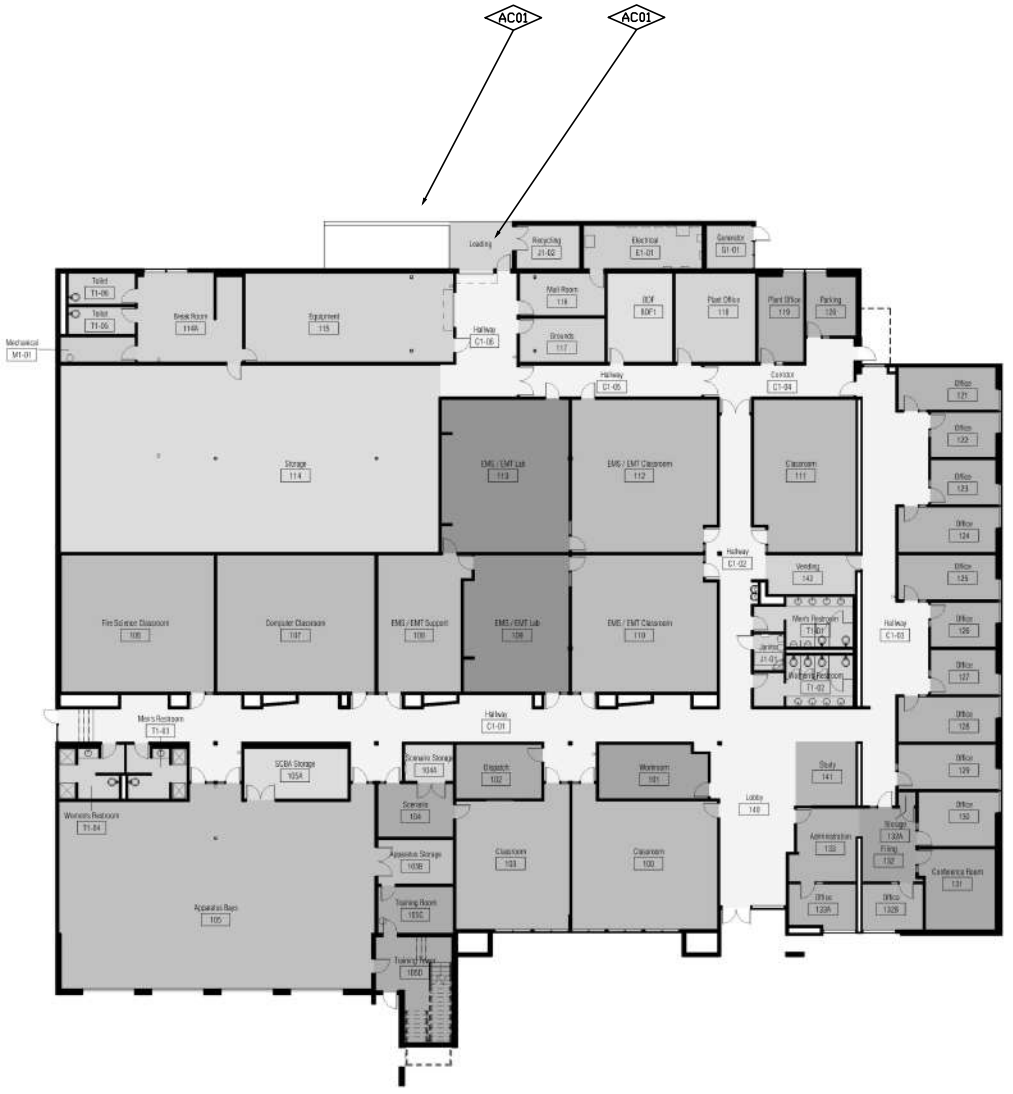
Average Annual Renewal Cost per SF $6.30

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



ES01

PUBLIC SERVICE EDUCATION BUILDING

BLDG NO. 2040

ES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

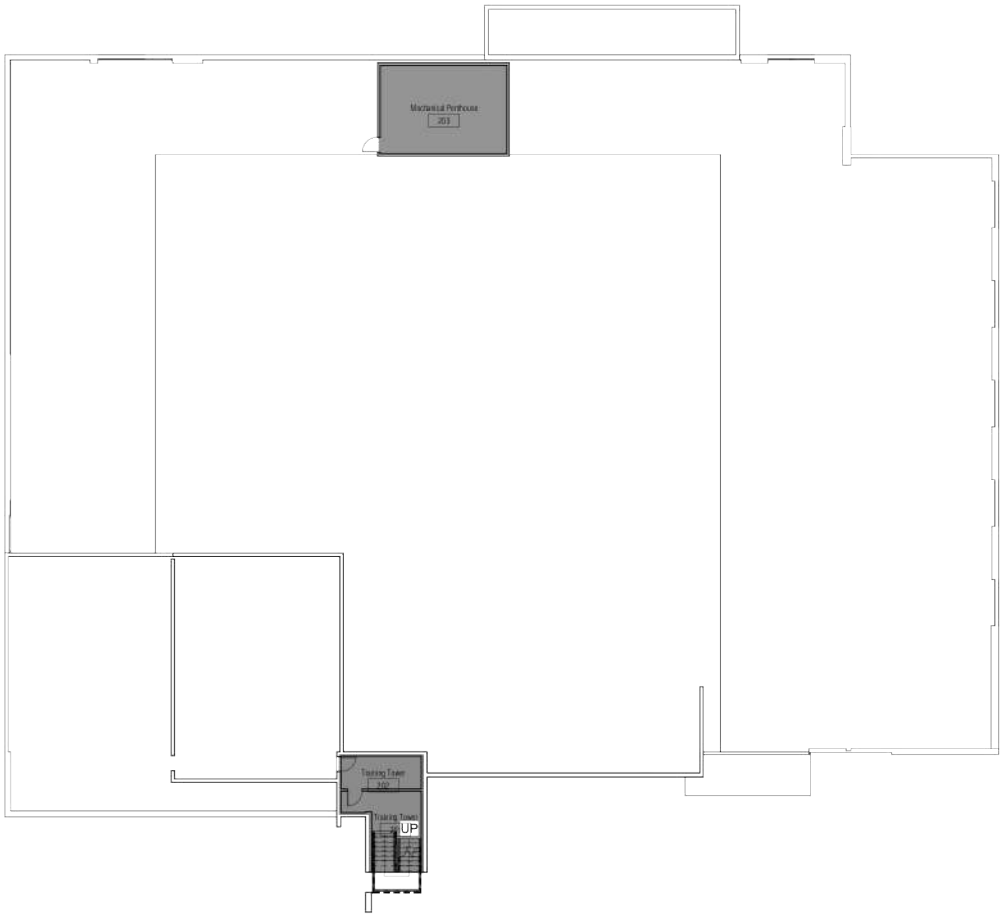
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE



FS01

PUBLIC SERVICE
EDUCATION
BUILDING

BLDG NO. 2040

ISES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date:	12/20/2018
Drawn by:	A.W.
Project No.	18-064

ROOF
FLOOR
PLAN

Sheet No.

2 of 2

SECTION 6

PHOTOGRAPHS

2040001a 9/12/2018

Overview of roof

Roof

2040001e 9/12/2018

Exhaust fans

Roof

2040002a 9/12/2018

Roof membrane and south side parapets

Roof

2040002e 9/12/2018

Exhaust fan

Roof

2040003a 9/12/2018

Roof edge without fall protection

Roof

2040003e 9/12/2018

Exhaust fan

Roof

2040004a 9/12/2018
Drill tower stair with compliant handrails
Roof

2040004e 9/12/2018
Air handling unit
Roof

2040005a 9/12/2018
Drill tower stair with compliant handrails
Roof

2040005e 9/12/2018
Coil section of AHU
Roof

2040006a 9/12/2018
Damaged roof membrane
Roof

2040006e 9/12/2018
Exhaust fans
Roof

2040007a 9/12/2018
Stucco finished mechanical screen wall
Roof

2040007e 9/12/2018
Ductwork
Roof

2040008a 9/12/2018
Roof drain and overflow scupper
Roof

2040008e 9/12/2018
Rooftop package unit
Roof

2040009a 9/12/2018
Roof edge without fall protection
Roof

2040009e 9/12/2018
Radiant heater
Room 105

2040010a 9/12/2018

Overhead door at the apparatus bay

Room 105

2040010e 9/12/2018

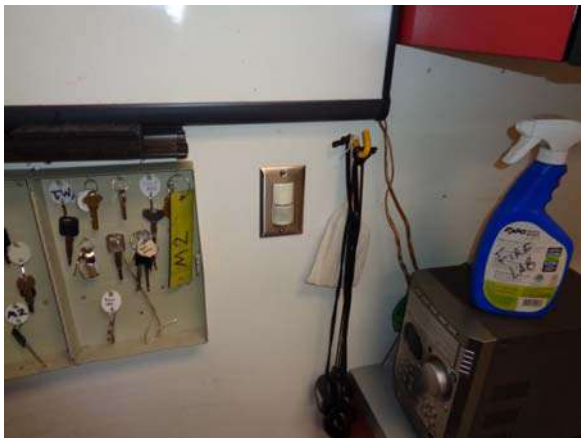
Unit heater

Room 105

2040011a 9/12/2018

Interior finishes

Room 105



2040011e 9/12/2018

Occupancy sensor

Room 105

2040012a 9/12/2018

Doors with compliant hardware, but missing required signage

Room 105

2040012e 9/12/2018

Strobe and occupancy sensor

Room T1-04

2040013a 9/12/2018

Interior finishes

Room 105

2040013e 9/12/2018

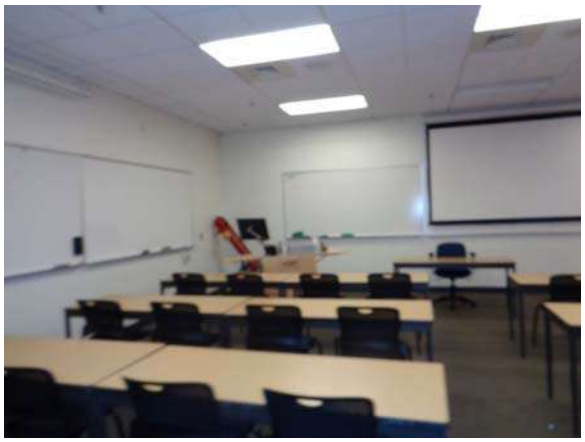
Strobe and interior lighting

Room T1-03

2040014a 9/12/2018

Water closet and accessories

Room T1-04



2040014e 9/12/2018

Interior lighting

Room 106

2040015a 9/12/2018

Lavatory, accessories, and finishes

Room T1-04

2040015e 9/12/2018

Digital thermostat

Room 107

2040016a 9/12/2018

Accessible shower

Room T1-04

2040016e 9/12/2018

Interior lighting

Room 100

2040017a 9/12/2018

Water closet and accessories

Room T1-03

2040017e 9/12/2018

Annunciator

Room 140

2040018a 9/12/2018

Floor finish at the accessible shower

Room T1-03

2040018e 9/12/2018

Interior lighting

Room 133

2040019a 9/12/2018

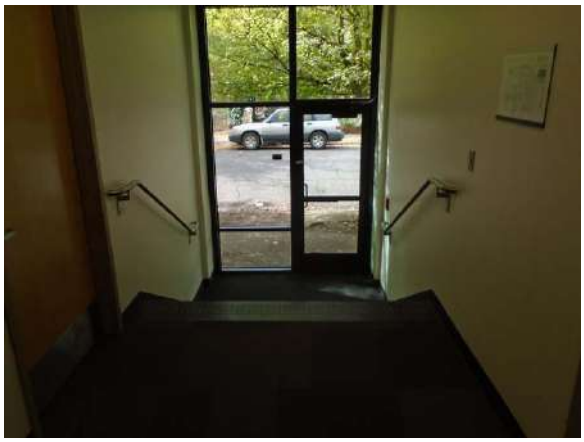
Casework and finishes

Room 106

2040019e 9/12/2018

Fire extinguisher

Room BDF-1



2040020a 9/12/2018

Stair with compliant handrails

Corridor C1-01

2040020e 9/12/2018

Evaporator

Room BDF-1

2040021a 9/12/2018

Exit doors, hardware, and sign

Corridor C1-01

2040021e 9/12/2018

Wheelock panel

Room BDF-1

2040022a 9/12/2018
Casework and accessible sink
Room 108

2040022e 9/12/2018
Water heater
Room M1-01

2040023a 9/12/2018
Casework and sinks
Room 109

2040023e 9/12/2018
Pump equipment
Room M1-01

2040024a 9/12/2018
Corridor finishes
Corridor C1-01

2040024e 9/12/2018
Sink
Room 114A

2040025a 9/12/2018
Study area finishes
Room 141

2040025e 9/12/2018
Instant water heater
Room 114A

2040026a 9/12/2018
Corridor finishes
Corridor C1-02

2040026e 9/12/2018
Piping
Room 115

2040027a 9/12/2018
Break area casework and sink
Room 142

2040027e 9/12/2018
Piping
Room 115

2040028a 9/12/2018
Typical glazing system detail
Corridor C1-03

2040028e 9/12/2018
VAV box
Room 115

2040029a 9/12/2018
Exit door, hardware, and signage
Corridor C1-04

2040029e 9/12/2018
ATS
Room E1-01

2040030a 9/12/2018
Utility sink
Room 114A

2040030e 9/12/2018
Panelboards
Room E1-01

2040031a 9/12/2018

Break room casework and sink

Room 114A

2040031e 9/12/2018

ATS

Room E1-01

2040032a 9/12/2018

Lavatory and finishes

Room T1-05

2040032e 9/12/2018

Fire alarm panels

Room E1-01

2040033a 9/12/2018

Accessible water closet and accessories

Room T1-05

2040033e 9/12/2018

Transformers

Room E1-01

2040034a 9/12/2018
Restroom doors with compliant hardware and signage
Room 114A

2040034e 9/12/2018
Interior lighting
Hallway C1-06

2040035a 9/12/2018
Utility sink
Room 115

2040035e 9/12/2018
Interior lighting
Hallway C1-05

2040036a 9/12/2018
Overhead door
Room 115

2040036e 9/12/2018
Exterior lighting
North elevation

2040037a 9/12/2018
Fire-rated corridor doors and hardware
Corridor C1-06

2040037e 9/12/2018
Exhaust fan
North elevation

2040038a 9/12/2018
Materials storage area finishes
Room 114A

2040038e 9/12/2018
Exterior lighting
Outside room G1-01

2040039a 9/12/2018
Overhead coiling steel door at the loading dock
Corridor C1-06

2040039e 9/12/2018
Generator
Room G1-01

2040040a 9/12/2018
Loading dock stairs with noncompliant handrails
North elevation

2040040e 9/12/2018
Exterior lighting
North elevation

2040041a 9/12/2018
Ramp without required handrails
North elevation

2040041e 9/12/2018
Exterior lighting
North elevation

2040042a 9/12/2018
Typical fire-rated door labels
Room 118

2040042e 9/12/2018
Exterior lighting
East elevation

2040043a 9/12/2018

Typical corridor finishes

Corridor C1-05

2040043e 9/12/2018

Exterior lighting

Site

2040044a 9/12/2018

Accessible drinking fountains

Corridor C1-02

2040044e 9/12/2018

Exterior lighting

South elevation

2040045a 9/12/2018

Men's accessible restroom with powered door opener

Room T1-01

2040045e 9/12/2018

Exterior lighting

South elevation

2040046a 9/12/2018
Lavatories and finishes
Room T1-01

2040046e 9/12/2018
Exterior lighting
Site

2040047a 9/12/2018
Urinals, screen, and finishes
Room T1-01

2040048a 9/12/2018
Standard stall and water closet
Room T1-01

2040049a 9/12/2018
Accessible water closet and accessories
Room T1-01

2040050a 9/12/2018
Partitions and area finishes
Room T1-02

2040051a 9/12/2018

Lavatories and finishes

Room T1-02

2040052a 9/12/2018

Accessible water closet and accessories

Room T1-02

2040053a 9/12/2018

Site at the main entrance

South elevation

2040054a 9/12/2018

Drill tower and exterior finishes

South elevation

2040055a 9/12/2018

Exterior finishes at the main entrance

South elevation

2040056a 9/12/2018

Exterior finishes and site conditions

South elevation

2040057a 9/12/2018
Street side exterior finishes
East elevation

2040058a 9/12/2018
Site conditions at the rear entrance
North elevation

2040059a 9/12/2018
Paint deterioration
North elevation

2040060a 9/12/2018
Metal siding at the mechanical area
North elevation

2040061a 9/12/2018
Loading dock stairs with noncompliant handrails
North elevation

2040062a 9/12/2018
Exterior finishes and site conditions
North elevation

2040063a 9/12/2018
Exterior finishes and site conditions
Northwest elevation

2040064a 9/12/2018
Paint deterioration
Northwest elevation

2040065a 9/12/2018
Street side exterior finishes
West elevation

2040066a 9/12/2018
Typical glazing system detail
West elevation

2040067a 9/12/2018
Apparatus bay doors and exterior finishes
South elevation

2040068a 9/12/2018
Apparatus bay doors and exterior finishes
South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2040
Asset Name	Public Service Education Building
Year Built or Last Energy Renovation	2004

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

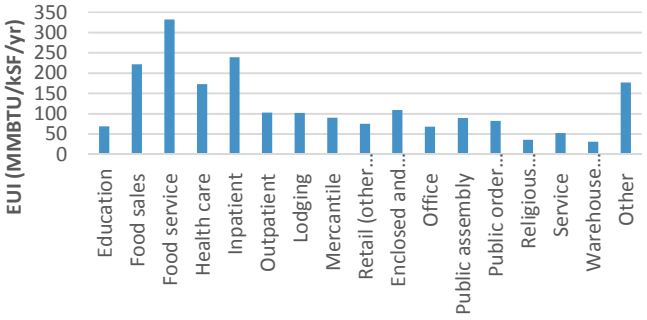
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**68.5**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48
Energy Efficient (consumes 10% to 30% less energy)	48 <= EUI <= 61.7
Similar (consumes within 10% less or 10% more energy)	61.7 < EUI < 75.4
Energy Inefficient (consumes 10% to 30% more energy)	75.4 <= EUI <= 89.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.1

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

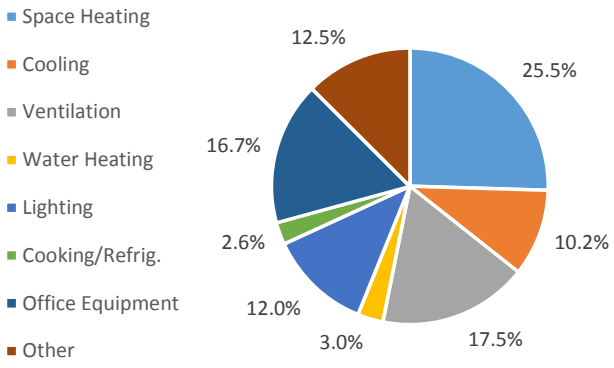


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Infrastructure Condition Assessment

Cascade Campus Infrastructure
Asset CA00

Inspected August 22, 2018

ISES
CORPORATION

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INFRASTRUCTURE CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

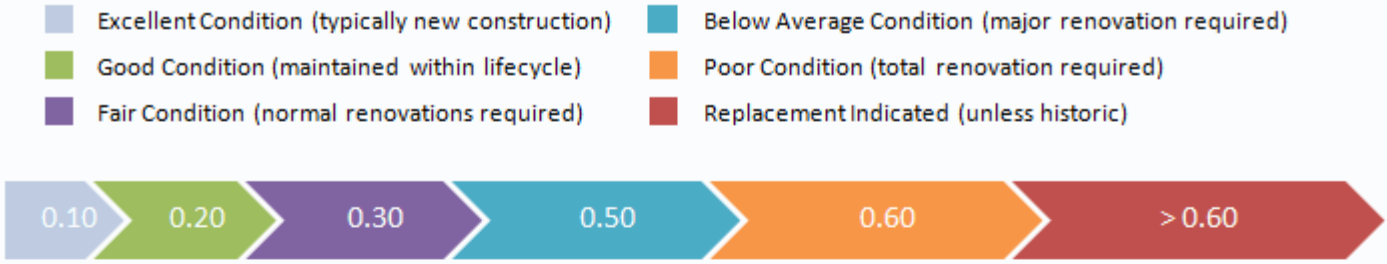
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

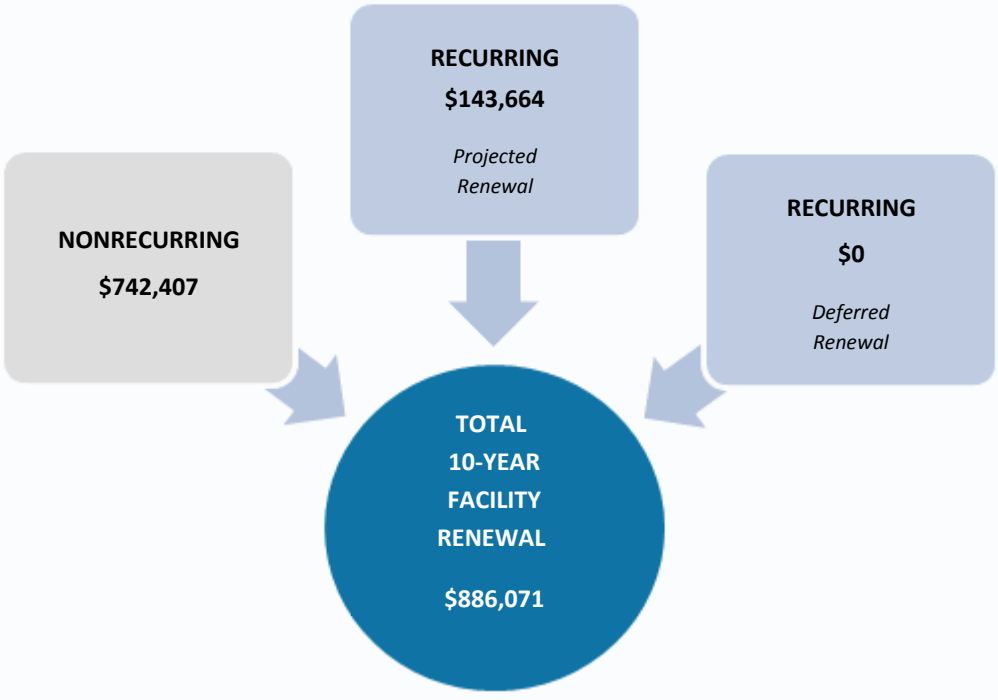
ASSET CODE	CA00	**CURRENT REPLACEMENT VALUE**	$5,174,895
ASSET NAME	CASCADE CAMPUS INFRASTRUCTURE	**FACILITY CONDITION NEEDS INDEX**	0.17
ASSET USE	Infrastructure	**FACILITY CONDITION INDEX**	0.00
YEAR BUILT	1970	**10-YEAR $/SF**	3.80
GSF	233,359		
INSPECTION DATE	08/22/2018		

FCNI Scale

The FCNI for this asset is **0.17**



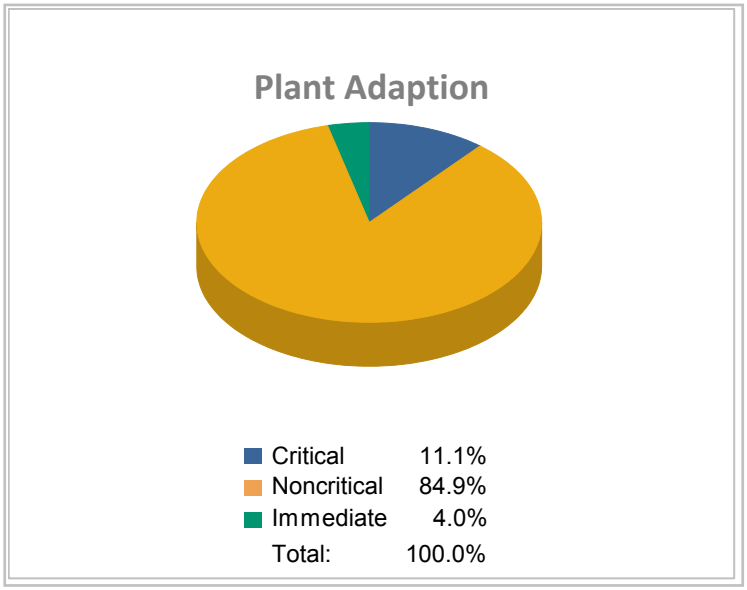
Total Facility Renewal Costs



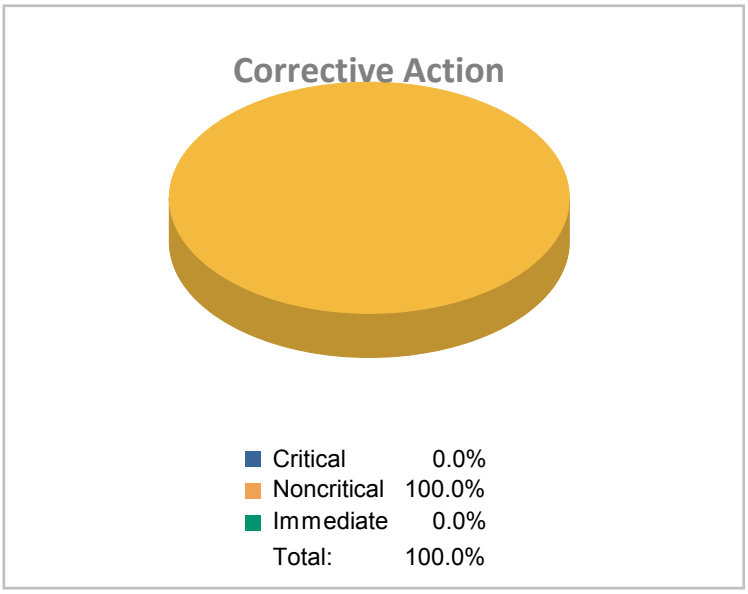
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$17,749**
2 - Critical	**$49,549**
3 - Noncritical	**$378,087**

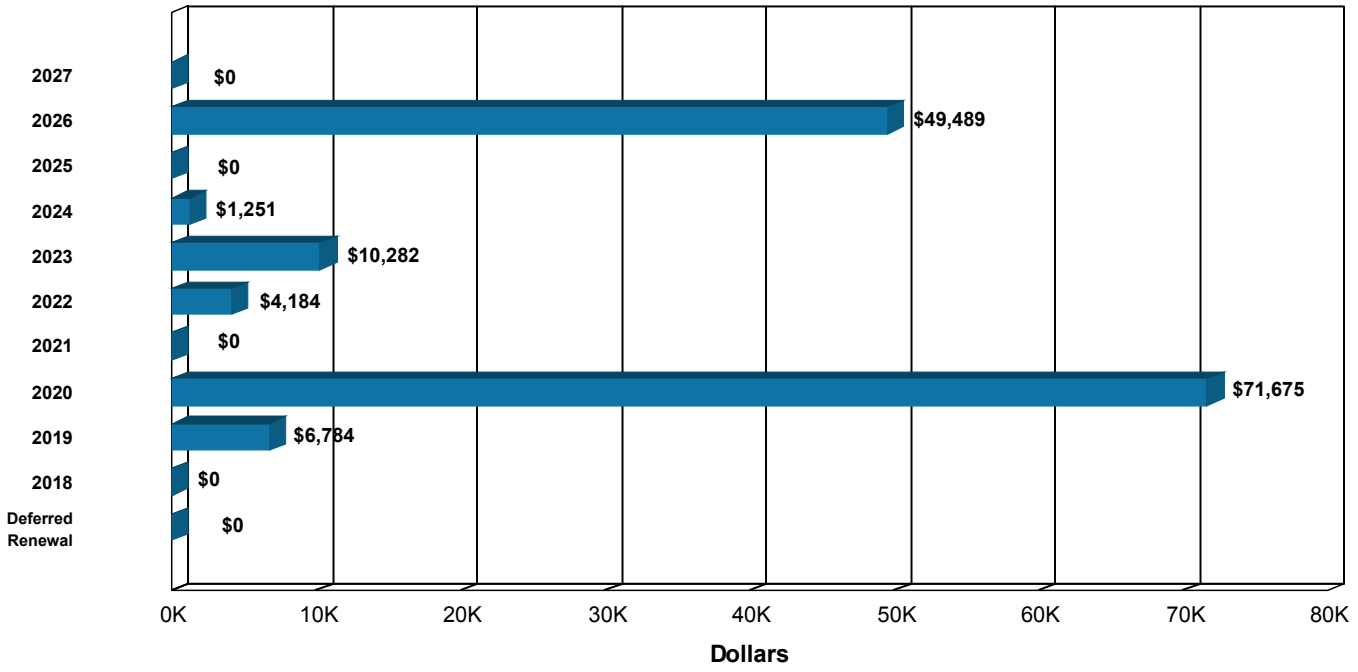


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$297,023**

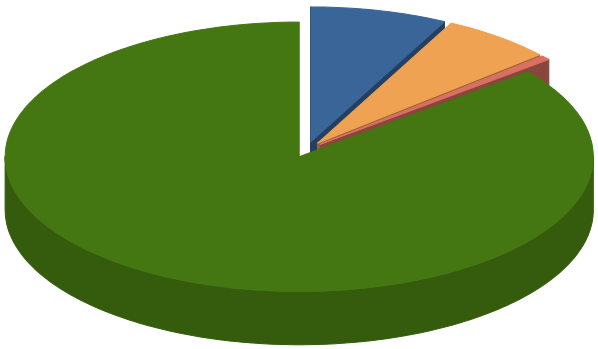


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$67,298	8%
Electrical	$52,560	6%
Exterior	$0	0%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$0	0%
Interiors	$0	0%
Plumbing	$5,555	1%
Site	$760,658	86%
Vert. Trans.	$0	0%
TOTAL	**$886,071**	

ASSET SUMMARY

Set in an urban setting, the Cascade campus of Portland Community College is located at 705 N. Killingsworth Street in Portland, Oregon. The campus was opened in 1970 on the site of a former Christian college. Additional facilities have been constructed since, with the most recent completed in 2014-2015. The Public Service Education Building is housed in a former retail facility that was extensively renovated in 2003. A pedestrian mall runs through the heart of the campus from the Public Services Education Building to Jackson Hall and Technology Education Building. Borthwick Mall is a north-south walkway (formerly Borthwick Avenue) that connects Parking Lot 1 on the north side to N. Killingsworth Street. Most of the campus lies north of N. Killingsworth Street between Missouri Avenue and Commercial Avenue, with the Physical Education Building south of N. Killingsworth Avenue. The campus now covers about 15.65 acres.

Information for this report was gathered during a site visit conducted on August 22, 2018.

Parking Lots

Pavement systems deteriorate with time due to a combination of normal aging and structural fatigue. At a certain point, the rate of deterioration starts to advance rapidly. Once a pavement reaches this stage, major repair or reconstruction is usually required to restore the pavement to good condition. Usually, pavements can be maintained in good condition through simple cost-effective measures. For example, sealing cracks minimizes water intrusion into the pavement structure that can weaken subbase layers leading to structural failure. Application of a surface sealant to asphalt pavements helps seal minor cracks and reduces the environmental affects that age a pavement. Sealing joints in concrete pavements keeps incompressible debris out of the joints that lead to cracking and joint deterioration. Recommendations made in this report are based on the philosophy that the cost to maintain a pavement in good condition is far less than the cost to restore or reconstruct the pavement system. Therefore, priority is given to pavement maintenance projects over pavement restoration (mill and overlay) or reconstruction projects.

The project recommendations in this report are based on commonly used pavement maintenance and repair methods. Before initiating a project, an engineering assessment should be performed, including pavement coring or other analysis to determine the existing pavement structure, and locating and measuring areas that require full-depth patching. Based on that assessment, other pavement maintenance or repair methods may be identified that would be more suitable for the conditions, less disruptive to daily operations, or possibly more cost effective.

The following table summarizes the parking lot pavements reviewed during this assessment. The pavement designations and are based on published maps and field observations. Pavement areas and parking space counts were taken from “PCC Parking and Transportation Areas” drawings dated May 19, 2015, revised July 14, 2017. The accuracy of the pavement area should be confirmed with field measurements before finalizing any projects.

Table 1: Parking Lot Summary

PARKING LOT	CONSTRUCTION DATE	LAST RESURFACED	TOTAL AREA (SF)	PARKING SPACES	ADA SPACES
1	1990	2011	97,373	303	13
2	2004/2005	2009	12,369	50	5
3	2004	2009	7,151	20	2
5	2004	2010	31,428	96	4
6	2014	2014	1,716	31	0
7	2014	2014	12,736	20	0
		TOTALS	**171,773**	**520**	**24**

Parking Lot 1: This parking lot is located north of Jessup Street between Albina Avenue and Kerby Avenue. It includes the entrance drive from Jessup Street. Other access points are Albina Avenue on the west side and from Kerby Avenue on the east side. Originally constructed prior to 1990, this parking lot has an asphalt pavement that was added to and modified over time. The Borthwick Walkway was added in 2004, providing a north-south walkway through the center of the parking lot to the heart of the campus. A building was demolished in the northwest corner and the area added to the paved parking in 2008. Also, in 2008-2009, extensive patching was completed in the parking lot. Evidence of that patching was observed during the site visit. Overall, the pavement is in fair condition, with extensive block cracking throughout. To restore the pavement to good condition, this parking lot should be milled and resurfaced. PCC periodically performs surface sealing and pavement striping as part of their pavement maintenance program. Continue the regular surface sealing and restriping program about every seven years after the restoration program is complete.

Parking Lot 2: This parking lot is located on the east side of the campus, between Jackson Hall and the Technology Education Building. Access is from the Kerby-Commercial Avenue Alley. The parking lot was constructed in 2004 and 2005 in conjunction with the addition to Jackson Hall and construction of Technology Education Building. The asphalt pavement is generally in good condition, with some isolated block cracking. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings. Prior to resurfacing, clean and seal the cracks using a polymer-modified asphalt.

Parking Lot 3: This parking lot is located south of the Physical Education Building, north of N. Killingsworth Court and west of N. Kerby Avenue. There are access drives from both of these streets. The asphalt pavement was constructed in 2004 and remains in good condition. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Parking Lot 4: This parking lot was located in the block north of N. Killingsworth Street between Mississippi Avenue and Albina Avenue. The original parking lot was replaced by an underground parking structure along with the construction of Cascade Hall and the Student Union in 2014. It is not included in this Infrastructure Assessment.

Parking Lot 5: This parking lot is located south of the Public Service Education Building, north of N. Killingsworth Street between Michigan Avenue and Mississippi Avenue, with access from the side streets. Originally constructed before 1970, the parking lot was extensively modified in 2003 in

conjunction with the renovation of the Public Service Education Building. The parking lot is generally in good condition, with one isolated area of depression at the SW corner (probably associated with subsurface drainage). This depression should be repaired with full-depth patching as part of normal site maintenance. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Parking Lot 6: This parking lot is located on the east side of the Telephone Exchange Building, west of Michigan Avenue between N. Church Street and N. Killingsworth Street. It has a single entrance from Michigan Avenue and was reconstructed in 2014. The asphalt pavement is in good condition. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings. A small depression was observed in the entrance drive. This area should be monitored and it further evidence of pavement distress is observed, it should be repaired with full-depth patching as part of normal site maintenance.

Parking Lot 7: This parking lot is located at the northeast corner of N. Killingsworth Street and N. Missouri Avenue, with a single access drive from Missouri Avenue. It was reconstructed in 2014 and the asphalt pavement is in good condition. To maintain this pavement, seal the surface within the next five years and re-paint the pavement markings.

Sidewalks

Pedestrian travel is supported by concrete sidewalks and plazas throughout the campus. Most of the hardscape is in good condition, consistent with the age of the campus, and constructed to modern standards. In general, the concrete flatwork should not need major repairs or replacement during the evaluation period.

However, one area that needs to be addressed is the sidewalks along Kerby Avenue between Terrell Hall and Jackson Hall. Portions of these sidewalks are showing signs of age, including faulting at joints and excessive side slope. A section of asphalt sidewalk was also observed. These sidewalks should be brought up to the same standards as other campus walkways, including widening to at least 6 feet.

One of the north-south walkways through the center of campus is Borthwick Mall. Formerly a city street, the asphalt pavement remains in most of the area. Recent construction has resulted in utility patching along the length of this pavement. In general, the asphalt pavement is in good condition. With limited vehicle traffic, the pavement should not need major repairs during the evaluation period. To maintain this pavement and minimize the effects of aging, periodically seal the surface.

Site Lighting

Parking lot lighting is mainly provided by pole-mounted sodium vapor lights with either single or double lamps per pole. Most of these lights were installed about 1990, with the lights in parking lots 6 and 7 installed in 2014. The sodium vapor lights appear to be in good condition, but are expected to reach the end of their normal service life during the evaluation period and should be replaced, except for those installed more recently.

The campus walkways and plazas are illuminated by pole-mounted LED lights with single lamps per pole. The LED lights are in good condition and should not need to be replaced during the evaluation period.

When replacing the older sodium-vapor lights, replacement fixtures should be LED lights in keeping with PCC energy conservation policies. Therefore, the cost for replacing these lights has been increased to account for the differences in material prices. All light poles are in good condition and should not need replacement during the evaluation period.

Site Accessibility

The scope of work addresses accessibility issues related to parking, path of travel from nearby public transportation stops to the campus, path of travel from accessible parking to campus circulation areas, and the overall paths of travel through the campus. Because the campus is nearly level and relatively new, overall site accessibility is good. However, accessibility improvements are needed to comply fully with current ADA Guidelines. Some of these needed improvements were documented in the "Portland Community College Americans with Disabilities Act Barrier Removal Plan" prepared by ISES Corporation in June 2012, and in the "Portland Community College Site Accessibility Assessment" prepared by David Evans and Associates, Inc. in April 2018. Others were noted during the site visit in August 2018.

Path of Travel from Public Transportation Stops: The TriMet bus system has stops along N. Killingsworth Street, including shelters at the corner of Albina Avenue. Campus sidewalks run from the public sidewalk at these bus stops into the heart of the campus. The paths of travel are level, concrete sidewalks. PCC also provides a shuttle bus between campuses, with a shuttle stop and shelter constructed on the east side of Kerby Avenue where it runs through the campus. The shuttle stop provides direct access to the heart of the campus.

Path of Travel from Parking Areas: Walkways connect the parking lots to the campus. Sidewalks are generally level and not a barrier to travel. However, portions of the sidewalks along Kerby Avenue as it passes through the campus are narrow and have side slopes that are a barrier to travel. This should be addressed with the project to reconstruct these sidewalks. The sidewalk along the south side of Parking Lot 1 has several areas where the cross-slope exceeds 2 percent. This sidewalk should be reconstructed to provide a level surface. At the same time, curb ramps should be reconstructed to modern standards, including tactile pads with adequate color contrast.

Accessible Parking: Accessible parking is provided in areas close to the main building entrances or to the main campus circulation paths. The number of accessible parking spaces is more than required. However, one of the accessible parking spaces in Parking Lot 1 does not have side aisles, as required. Van accessible spaces are provided in Parking Lots 1 and 2 and additional van accessible spaces should be provided in Parking Lots 3 and 5. This will require some reconfiguration to comply with current requirements. Curb ramps are provided in most places but additional curb ramps are needed for Parking Lot 1 and should be included as part of the recommended sidewalk reconstruction project. Where curb ramps are provided, most have tactile warnings that do not have adequate contrast. Install compliant tactile pads at these curb ramps. Some accessible parking spaces have slopes more than 2 percent and need to be reconstructed to comply with the slope requirements or need to be relocated. Some accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced.

Paths of Travel Through Campus: Because the campus is nearly level, the paths of travel through the campus are generally free of obstructions and meet ADA requirements. However, the sidewalks on either side of Kerby Avenue are not ADA compliant. These sidewalks are included in the sidewalk reconstruction project. The sidewalk through Parking Lot 1 that connects to Borthwick Mall has some curb ramps and tactile warnings which lack adequate contrast. Where walkways cross or enter parking lots or drive lanes, several lack tactile warning pads or have tactile warning pads that lack adequate contrast with the background pavement surface (light gray). The crossings of Kerby Avenue are not painted. Install compliant tactile pads at these locations and paint the walkway crossings.

Underground Utilities

Underground utilities at this site include stormwater, sanitary sewer, water, and fire protection utilities. These are discussed in the following sections. Utility services to individual buildings are provided directly from public utility lines running under public roadways.

PCC personnel have expressed a desire to have a more comprehensive method to manage the underground utility assets. Available information about underground utilities is lacking, making asset management difficult. A detailed subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. The survey should include a review of existing documents and recording that information on a comprehensive CAD drawing. The field work should include field locating visible utility items, such as manholes and vaults, measuring invert elevations and pipe sizes, and recording pipe and manhole materials. The information obtained from the field survey will be used to field verify the information obtained from the existing document and drawing review and to correct that information, when in error.

Each component of the underground systems has a quantifiable industry standard expected lifecycle. Information related to system performance was reviewed to determine trends that might affect that lifecycle and the future safety, reliability, and efficiency of the system. The table below shows the expected useful, reliable life of typical underground utility system components.

Table 2: Average Expected Useful Life

COMPONENT	TYPE	USEFUL LIFE (YEARS)
Storm drain pipe	Concrete	100
Storm drain pipe	Terra cotta clay	75
Storm drain pipe	Ductile iron	50
Storm drain pipe	Corrugated metal	45
Manhole	Concrete	100
Manhole	Brick masonry	75
Catch basin/drop Inlet	Concrete	100
Catch basin/drop Inlet	Brick masonry	75
Combo drain	Concrete	100

COMPONENT	TYPE	USEFUL LIFE (YEARS)
Combo drain	Brick masonry	75
Sanitary sewer pipe	Concrete	100
Sanitary sewer pipe	Vitrified clay	75
Sanitary sewer pipe	Ductile iron	50
Sanitary sewer pipe	PVC or plastic	50
Manhole	Concrete	100
Manhole	Brick masonry	75
Potable water supply line	PVC or plastic	50
Potable water supply line	Ductile iron	75
Potable water supply line	Cast-iron	75
Fire hydrant	Cast-iron	65
Fire pump	125 hp, 1,000 GPM	25
Domestic water pump	15 hp, electric	20

Source Data: ASHRAE, BOMA, Hartford Ins. Co., ISES Database

The realization of the full expected useful life preserves the original capital investment strategy while accelerated depreciation results in premature expenditure of resources. It should be emphasized that expected useful life values are averaged forecasts based on components that are properly maintained and operated without frequent and/or severe operating conditions. Chronological age is not the primary determinant of service life. In many instances, there is ample evidence of components operating well beyond predicted useful life values. This is why it is important to modify these values based on actual conditions, service history, operating conditions, installation environment, and actual field performance.

In addition, system components reaching the predicted endpoint of expected useful life do not necessarily cease to function. What does occur is a downward trend toward loss of service reliability, a potential increase in maintenance costs, damage caused by natural events, and possible loss of service due to failure.

Stormwater Drainage Systems

PCC has a commitment to sustainable practices. As part of this commitment, the stormwater drainage systems on this campus have been designed and constructed with on-site stormwater quality treatment and disposal systems.

Stormwater is collected through a system of area drains, drop inlets, and curb inlets. Some of the landscape islands in the parking areas are designed to allow stormwater to flow into the islands through curb cuts, with the islands acting as natural filter systems before being collected in area drains. Stormwater is conveyed from the various inlets through shallow concrete pipes to stormwater management manholes for further treatment. Final disposal is through a series of dry wells for on-site infiltration. Additionally, PCC has a stormwater injection management program (SWIMP) with strict guidelines for maintaining PCC stormwater facilities.

No specific information was available for the stormwater management associated with the campus area between Mississippi Avenue and Albina Avenue. Prior to construction of the newest campus facilities, this area was occupied by parking lots that had stormwater management, treatment, and disposal systems appropriate for that use. It is assumed the new development on the site included new stormwater management systems in keeping with the PCC standards.

The following table is an estimate of the stormwater system components on the Cascade Campus.

Table 3: Summary of Stormwater Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
Catch basins, concrete	8	each	1970-1990
Catch basins, concrete	35	each	2004-2005
Catch basins, concrete	4	each	2014
Stormwater filters with catch basins	8	each	1970-1990
Stormwater filters with catch basins	11	each	2004-2005
Sedimentation units	1	each	1970-1990
Sedimentation units	15	each	2004-2005
Sedimentation units	2	each	2014
Dry wells	13	each	1970-1990
Dry wells	41	each	2004-2005
Dry wells	5	each	2014
12-inch concrete pipe	325	linear feet	1970-1990
12-inch concrete pipe	1635	linear feet	2004-2005
12-inch concrete pipe	150	linear feet	2014

Most of the stormwater infrastructure is less than 25 years old. Therefore, replacement of the stormwater components should not be needed during the evaluation period. Stormwater infrastructure in Parking Lots 1 and 5 is believed to be about 30 to 50 years old. No problems have been reported and no visual indications of problems were noted during the site visit. Therefore, these components should not need to be replaced.

It is important to note that utility infrastructure assets normally encompass more than just a single component and will, in most situations, represent a section or group of materials, i.e. linear footage of installed piping systems. The majority of these systems will continue to operate reliably and safely beyond the ten-year planning horizon of this assessment. However, beyond the next ten years, it will be necessary to re-inspect the systems to ensure that they continue to operate reliably.

Sanitary Sewer

The sanitary sewage system for the campus is a collection and conveyance system. Because the area is relatively flat, the area is served by gravity sewers. PCC does not treat its own sewage but discharges it to the municipal sewer mains, which transport it to the regional wastewater treatment plant. The treatment plant and municipal lines were not part of the ISES evaluation.

The buildings are directly connected to the municipal sewers with 6-inch ductile iron pipes. The following table is an estimate of the sanitary pipe that serves the Southeast Campus.

Table 4: Summary of Sanitary Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
6 inch pipe	295	linear feet	1970-1990
6 inch pipe	540	linear feet	2004-2005
6 inch pipe	40	each	2014

No problems have been reported with the sanitary sewer conveyance system. Much of the sanitary sewer system is less than 20 years old and should not need replacement during the evaluation period. The older sanitary sewer components may be 30 to 50 years old. No problems have been reported and no visual indications of problems were noted during the site visit. Therefore, replacement of these sanitary sewer system components will probably not be needed during the evaluation period.

It is a good policy and a recommendation of this report to develop and conduct a preventative maintenance program for the sanitary sewer system. A vital part of that program is video monitoring the linear assets when and where feasible and jet-washing any built-up debris or solids in the lines and manholes to ensure that the pipes have the maximum flow capacity to handle peak demand. It is recommended that PCC start a program of jet-washing and CCTV inspections. The oldest and/or most problematic lines are typically evaluated first to determine the characteristics of the typical flow and identify any urgent or critical repair or replacement needs. Routinely CCTV inspect a portion of the infrastructure every couple of years and all lines typically at least once every ten years. With the age of this system and its expected lifecycle, it is inevitable that portions will wear out and need to be repaired or replaced. The CCTV inspections will allow PCC to identify problem areas and then plan and budget for repair or replacement.

Water Distribution and Fire Protection

Both potable water and fire protection water are supplied to the campus by direct connection to the city water mains. Because the site is nearly level, no pumps are needed to provide adequate water pressure. Water lines are reported to be 6 to 8 inch ductile iron. The potable water and fire protection system appears to be properly sized and in overall good condition.

The following table is an estimate of the potable water and fire protection system components that serve the Southeast Campus.

Table 5: Summary of Potable Water and Fire Protection System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
6 inch water supply pipe	245	Linear feet	1970-1990
8 inch water supply pipe	35	Linear feet	1970-1990
6 inch water supply pipe	730	Linear feet	2004-2005
8 inch water supply pipe	825	Linear feet	2004-2005
6 inch water supply pipe	180	Linear feet	2014
8 inch water supply pipe	180	Linear feet	2014
Fire hydrants	7	Each	2004-2014

No problems with the water distribution system have been reported. Most of the water distribution system is less than 20 years old. The older portions of the water distribution system are believed to be 30 to 50 years old. Therefore, replacement of most system components will probably not be needed during the evaluation period.

Other Considerations

In reviewing the Portland Community College Facilities Plan, improvements to site accessibility are recommended. Implementing the project recommendations in the Site Accessibility section should address most of these issues. In addition, a campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

Another recommendation is the addition of electric vehicle charging stations. No guidelines have been established for determining how many stations should be installed. Therefore, it may be better to implement these in phases, perhaps a group of 4 charging stations in one of the major parking lots, and the addition of additional charging stations as the demand dictates.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional inspector examined the infrastructure to determine what repairs or modifications may be necessary to restore the systems to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the site to modern standards without any anticipation of change to layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include space change, program issues, relocation, contingency, or costs that could not be identified or determined from the visual inspection and available information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

August 22, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Ric Gibbs, PE	Facility Assessor	Site paving, Accessibility, and Utilities

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Infrastructure report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of systems and components. The tool for projecting the recurring renewal costs is the Lifecycle Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the systems and components. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards, not original design parameters. This index gives the college a comparison tool for identifying worst case/best case conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory is a list of major systems and components and is based on industry standard lifecycle expectancies. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the system. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the systems and components are not included in the Lifecycle Component Inventory. For each such deficiency, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the second accessibility project identified for asset 0001 would have a project number of 0001AC02 (0001 for the asset number, AC for accessibility, and 02 being the next sequential number for an accessibility project).

Project Classifications

- ### Plant Adaption
  Nonrecurring expenditures required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- ### Corrective Action
  Nonrecurring expenditures needed to correct random and unpredictable deficiencies. Such projects are not related to aligning with codes or standards. Deficiencies classified as Corrective Action could have an effect on site or utility safety and usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- ### Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a system to normal operation

- ### Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements associated with noncritical accessibility needs

  b. actions to bring a system into compliance with current codes

  c. actions to improve the usability of the system

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE

Example: Category Code = EL5A	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	AC2B	0001AC02	01
1	PL1D	0001PL02	02
2	EL4C	0001EL03	04

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	17,749	49,549	0	0	0	0	0	0	0	0	0	0	0	0	$67,298
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
PLUMBING	0	0	5,555	0	0	0	0	0	0	0	0	0	0	0	$5,555
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	51,309	0	0	0	1,251	0	0	0	$52,560
SITE	0	0	669,554	0	0	6,784	20,366	0	4,184	10,282	0	0	49,489	0	$760,658
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$17,749	$49,549	$675,109	$0	$0	$6,784	$71,675	$0	$4,184	$10,282	$1,251	$0	$49,489	$0	$886,071
TOTAL NONRECURRING PROJECT NEEDS			$742,407	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$143,664	

CURRENT REPLACEMENT VALUE	$5,174,895
FACILITY CONDITION NEEDS INDEX	0.17
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
233,359	$886,071	$3.80

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$67,298	$0	$67,298
EXTERIOR	$0	$0	$0
INTERIOR	$0	$0	$0
PLUMBING	$5,555	$0	$5,555
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$52,560	$52,560
SITE	$669,554	$91,104	$760,658
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$742,407**	**$143,664**	**$886,071**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
CA00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	17,749
CA00AC02	PARKING LOT ACCESSIBILITY UPGRADES	G2020	2	Plant Adaption	49,549
CA00PL01	CCTV SANITARY SEWER LINES	D2030	3	Plant Adaption	5,555
CA00SI01	SUBSURFACE UTILITY ENGINEERING	G2040	3	Plant Adaption	141,771
CA00SI02	SIDEWALK REPLACEMENT	G2040	3	Corrective Action	39,033
CA00SI03	PARKING LOT PAVEMENT RENEWAL	G2040	3	Corrective Action	257,990
CA00SI05	ELECTRIC VEHICLE CHARGING STATIONS	G4090	3	Plant Adaption	194,553
CA00SI04	SITE WAY FINDING	G9090	3	Plant Adaption	36,209
				TOTAL	**$742,407**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 2	G2020	2019	6,784
CA00 LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	1990			D5020	2020	51,309
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 3	G2020	2020	3,138
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 5	G2020	2020	17,228
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			BORTHWICK MALL	G2020	2022	4,184
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 6	G2020	2023	4,697
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 7	G2020	2023	5,585
CA00 LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	2004			D5020	2024	1,251
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 2	G2020	2026	6,784
CA00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 1	G2020	2026	42,705
						TOTAL	$143,664

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
7	CA00SI02	SIDEWALK REPLACEMENT	3	$39,033
8	CA00SI03	PARKING LOT PAVEMENT RENEWAL	3	$257,990
		TOTAL FOR CORRECTIVE ACTION		**$297,023**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	CA00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	1	$17,749
2	CA00AC02	PARKING LOT ACCESSIBILITY UPGRADES	2	$49,549
3	CA00PL01	CCTV SANITARY SEWER LINES	3	$5,555
4	CA00SI04	SITE WAY FINDING	3	$36,209
5	CA00SI05	ELECTRIC VEHICLE CHARGING STATIONS	3	$194,553
6	CA00SI01	SUBSURFACE UTILITY ENGINEERING	3	$141,771
		TOTAL FOR PLANT ADAPTION		**$445,385**
		GRAND TOTAL:		**$742,407**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	CA00AC01	1	Plant Adaption	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	$17,749
2	CA00AC02	2	Plant Adaption	PARKING LOT ACCESSIBILITY UPGRADES	$49,549
				TOTAL FOR ACCESSIBILITY	**$67,298**
3	CA00PL01	3	Plant Adaption	CCTV SANITARY SEWER LINES	$5,555
				TOTAL FOR PLUMBING	**$5,555**
4	CA00SI04	3	Plant Adaption	SITE WAY FINDING	$36,209
5	CA00SI05	3	Plant Adaption	ELECTRIC VEHICLE CHARGING STATIONS	$194,553
6	CA00SI01	3	Plant Adaption	SUBSURFACE UTILITY ENGINEERING	$141,771
7	CA00SI02	3	Corrective Action	SIDEWALK REPLACEMENT	$39,033
8	CA00SI03	3	Corrective Action	PARKING LOT PAVEMENT RENEWAL	$257,990
				TOTAL FOR SITE	**$669,554**
				GRAND TOTAL:	**$742,407**

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SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

CIRCULATION PATHWAY ACCESSIBILITY UPGRADES

Project Number:	CA00AC01	**Category Code:** AC2A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	10/24/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 405, 505, 406	Not Applicable	Item Only: Floor(s) S

Description

One of the two walkways across Mississippi Avenue leads to steps that are not accessible by a wheelchair. Install a ramp adjacent to these steps to provide wheelchair access directly to the Public Service Education Building. Where walkways cross or enter parking lots or drive lanes, several lack tactile warning pads or have tactile warning pads that lack adequate contrast with the background pavement surface (light gray). Also, most crossings are not painted. Install compliant tactile pads at these locations and paint the walkway crossings.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair ramp construction, including handrails	VFT	2	$2,547	$5,093	$2,255	$4,509	$9,602
Install or replace tactile warning pads	EA	10	$262	$2,616	$32.55	$326	$2,942
Paint crosswalks where pathways cross drive lanes, 6-inch wide lines	EA	5	$27.50	$138	$15.40	$77	$215
			Base Material/Labor Costs	**$7,847**		**$4,912**	
			Indexed Material/Labor Costs	**$7,799**		**$4,951**	**$12,751**
					Construction Mark Up at 20.0%		**$2,550**
					Original Construction Cost		**$15,301**
Date of Original Estimate: 10/24/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$15,301**
					Professional Fees at 16.0%		**$2,448**
					TOTAL PROJECT COST		**$17,749**

All costs shown as Present Value

PARKING LOT ACCESSIBILITY UPGRADES

Project Number:	CA00AC02	**Category Code:** AC1C	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	SITE
Date Basis:	10/24/2018	**Element:**	PARKING

Code Application:		Subclass/Savings:	Project Location:
ADAAG	502	Not Applicable	Area Wide: Floor(s) S

Description

Accessible parking is provided in areas close to the main building entrances or to the main campus circulation paths. The number of accessible parking spaces is more than required. However, one of the accessible parking spaces in Parking Lot 1 is not provided with side aisles, as required. Van accessible spaces are provided in Parking Lots 1 and 2 and additional van accessible spaces should be provided in Parking Lots 3 and 4. This will require some reconfiguration to comply with current requirements. Some accessible parking spaces have slopes of more than 2 percent and need to be reconstructed to comply with the slope requirements or need to be relocated. Some accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Handicapped parking space, including striping and signage	EA	3	$340	$1,019	$106	$318	$1,337
Install or replace tactile warning pads	EA	10	$262	$2,616	$32.55	$326	$2,942
Rebuild asphalt roadway paving structure to meet slope requirements	SY	450	$28.67	$12,902	$35.84	$16,128	$29,030
ADA-compliant parking signage	EA	10	$134	$1,344	$90.93	$909	$2,254
			Base Material/Labor Costs	**$17,880**		**$17,681**	
			Indexed Material/Labor Costs	**$17,773**		**$17,823**	**$35,596**
					Construction Mark Up at 20.0%		**$7,119**
					Original Construction Cost		**$42,715**
Date of Original Estimate: 10/24/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$42,715**
					Professional Fees at 16.0%		**$6,834**
					TOTAL PROJECT COST		**$49,549**

All costs shown as Present Value

CCTV SANITARY SEWER LINES

Project Number:	CA00PL01	**Category Code:** PL4C	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	PLUMBING
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	10/24/2018	**Element:**	SANITARY WATER COLLECTION

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Where possible, monitor and record via closed circuit television (CCTV) the existing flow characteristics and structural conditions of sanitary sewer lines from buildings to connection with City sewer lines. Jetwash the lines before performing the CCTV inspection.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Jetwash sewer lines	LF	875	$0.70	$613	$1.55	$1,356	$1,969
CCTV sewer lines	LF	875	$1.15	$1,006	$1.15	$1,006	$2,013
Base Material/Labor Costs				**$1,619**		**$2,363**	
Indexed Material/Labor Costs				**$1,609**		**$2,381**	**$3,990**
Construction Mark Up at 20.0%							**$798**
Original Construction Cost							**$4,789**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,789**
Professional Fees at 16.0%							**$766**
TOTAL PROJECT COST							**$5,555**

All costs shown as Present Value

SITE WAY FINDING

Project Number:	CA00SI04	**Category Code:** SI1A	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	ACCESS
Date Basis:	11/14/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

A campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wayfinding study	LOT	1	$0.00	$0	$10,000	$10,000	$10,000
Install signage	LOT	1	$14,000	$14,000	$2,000	$2,000	$16,000
Base Material/Labor Costs				**$14,000**		**$12,000**	
Indexed Material/Labor Costs				**$13,916**		**$12,096**	**$26,012**
Construction Mark Up at 20.0%							**$5,202**
Original Construction Cost							**$31,214**
Date of Original Estimate: 11/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$31,214**
Professional Fees at 16.0%							**$4,994**
TOTAL PROJECT COST							**$36,209**

All costs shown as Present Value

ELECTRIC VEHICLE CHARGING STATIONS

Project Number:	CA00SI05	**Category Code:** SI5B	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	11/14/2018	**Element:**	ELECTRICAL

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The Facilities Plan recommends the addition of electric vehicle charging stations. No guidelines have been established for determining how many stations should be installed. Therefore, it may be better to implement these in phases, perhaps a group of four charging stations in one of the major parking lots, and the addition of additional charging stations as the demand dictates.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
EV charging station, double-unit	EA	8	$12,100	$96,800	$5,400	$43,200	$140,000
			Base Material/Labor Costs	**$96,800**		**$43,200**	
			Indexed Material/Labor Costs	**$96,219**		**$43,546**	**$139,765**
						Construction Mark Up at 20.0%	**$27,953**
						Original Construction Cost	**$167,718**
Date of Original Estimate:	11/14/2018					**Inflation**	**$0**
						Current Year Construction Cost	**$167,718**
						Professional Fees at 16.0%	**$26,835**
						TOTAL PROJECT COST	**$194,553**

All costs shown as Present Value

SUBSURFACE UTILITY ENGINEERING

Project Number:	CA00SI01	**Category Code:** SI4A	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/24/2018	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Available information about underground utilities is lacking, making asset management difficult. A level C subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. Start with a level D survey that includes review of existing documents and recording that information on a comprehensive CAD drawing. The level C survey will include field surveying to locate visible utility items, such as manholes and vaults, and measuring invert elevations and pipe sizes. The information obtained from the level C survey will be used to field verify the information obtained from the level D survey and to correct that information, when in error.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Level D subsurface utility survey	LOT	1	$2,218	$2,218	$44,960	$44,960	$47,178
Level C subsurface utility survey	LOT	1	$2,218	$2,218	$51,704	$51,704	$53,922
			Base Material/Labor Costs	**$4,436**		**$96,664**	
			Indexed Material/Labor Costs	**$4,409**		**$97,437**	**$101,847**
					Construction Mark Up at 20.0%		**$20,369**
					Original Construction Cost		**$122,216**
Date of Original Estimate:	10/24/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$122,216**
					Professional Fees at 16.0%		**$19,555**
					TOTAL PROJECT COST		**$141,771**

All costs shown as Present Value

SIDEWALK REPLACEMENT

Project Number:	CA00SI02	**Category Code:** SI1A	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	10/24/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Area Wide: Floor(s) S

Description

The sidewalks along Kerby Avenue between Terrell Hall and Jackson Hall are showing signs of age, including faulting at joints and excessive side slope. A section of asphalt sidewalk was also observed. These sidewalks should be brought up to the same standards as other campus walkways, including widening to at least 6 feet. The sidewalk along the south side of Parking Lot 1 has several areas where the cross-slope exceeds 2 percent. This sidewalk should be reconstructed to provide a level surface. At the same time, curb ramps should be reconstructed to modern standards, including tactile pads with adequate color contrast.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian concrete walkways	SF	3,150	$4.23	$13,325	$4.66	$14,679	$28,004
Base Material/Labor Costs				**$13,325**		**$14,679**	
Indexed Material/Labor Costs				**$13,245**		**$14,796**	**$28,041**
Construction Mark Up at 20.0%							**$5,608**
Original Construction Cost							**$33,649**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$33,649**
Professional Fees at 16.0%							**$5,384**
TOTAL PROJECT COST							**$39,033**

All costs shown as Present Value

PARKING LOT PAVEMENT RENEWAL

Project Number:	CA00SI03	**Category Code:** SI1B	
Priority Sequence:	8		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	10/24/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

Overall, the parking lot 1 asphalt pavement is in fair condition, with extensive block cracking throughout. Large areas of patching were observed on the day of inspection. To restore the pavement to good condition, this parking lot should be milled and resurfaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Scarify and overlay for asphalt parking lot surfaces	SY	10,820	$9.85	$106,577	$7.28	$78,770	$185,347
Base Material/Labor Costs				**$106,577**		**$78,770**	
Indexed Material/Labor Costs				**$105,938**		**$79,400**	**$185,337**
Construction Mark Up at 20.0%							**$37,067**
Original Construction Cost							**$222,405**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$222,405**
Professional Fees at 16.0%							**$35,585**
TOTAL PROJECT COST							**$257,990**

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SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)	1990			21	EA	$92,447	1990	40		2030
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)	2014			12	EA	$52,827	2014	40		2054
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)	2004			1	EA	$4,402	2004	40		2044
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)	2004			68	EA	$132,437	2004	40		2044
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)	2014			8	EA	$15,581	2014	40		2054
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)	1990			4	EA	$7,790	1990	40		2030
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	1990			41	EA	$51,309	1990	20	10	2020
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	2004			1	EA	$1,251	2004	20		2024
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	2014			8	EA	$10,011	2014	20		2034
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM	2014			12	EA	$52,341	2014	20		2034
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM	2004			68	EA	$296,599	2004	20	5	2029
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 1	10,820	SY	$42,705	2009	7	10	2026
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 2	1,375	SY	$6,784	2005	7	7	2019
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 3	795	SY	$3,138	2004	7	9	2020
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 5	3,492	SY	$17,228	2004	7	9	2020

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 6	1,190	SY	$4,697	2014	7	2	2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT 7	1,415	SY	$5,585	2014	7	2	2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			BORTHWICK MALL	1,060	SY	$4,184	2015	7		2022
FH01	FIRE HYDRANT				7	EA	$74,468	2004	65		2069
PF13	DUCTILE IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE			180	LF	$32,802	2014	75		2089
PF13	DUCTILE IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE			730	LF	$133,030	2004	75		2079
PF13	DUCTILE IRON PIPE - 6" DIAMETER	SANITARY SEWER LATERAL			295	LF	$53,759	1990	75		2065
PF13	DUCTILE IRON PIPE - 6" DIAMETER	SANITARY SEWER LATERAL			540	LF	$98,406	2004	75		2079
PF13	DUCTILE IRON PIPE - 6" DIAMETER	SANITARY SEWER LATERAL			40	LF	$7,289	2014	75		2089
PF13	DUCTILE IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE			245	LF	$44,647	1990	75		2065
PF14	DUCTILE IRON PIPE - 8" DIAMETER	WATER SUPPLY PIPE			35	LF	$6,790	1990	75		2065
PF14	DUCTILE IRON PIPE - 8" DIAMETER	WATER SUPPLY PIPE			825	LF	$160,039	2004	75		2079
PF14	DUCTILE IRON PIPE - 8" DIAMETER	WATER SUPPLY PIPE			180	LF	$34,918	2014	75		2089
SD08	CONCRETE PIPE - 12" DIAMETER	STORM DRAIN PIPE			325	LF	$68,534	1990	100		2090
SD08	CONCRETE PIPE - 12" DIAMETER	STORM DRAIN PIPE			1,635	LF	$344,776	2004	100		2104

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SD08	CONCRETE PIPE - 12" DIAMETER	STORM DRAIN PIPE			150	LF	$31,631	2014	100		2114
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	STORM DRAINAGE			8	EA	$25,855	1990	100		2090
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	STORM DRAINAGE			35	EA	$113,115	2004	100		2104
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	STORM DRAINAGE			4	EA	$12,927	2014	100		2114
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	CATCH BASINS W/ STRMWTR FLTRS			8	EA	$38,782	1990	100		2090
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	CATCH BASINS W/ STRMWTR FLTRS			11	EA	$53,326	2004	100		2104
SD63	CONCRETE MANHOLE - 5 TO 10 FT DEEP	SDMNTTN UNIT			1	EA	$10,254	1990	100		2090
SD63	CONCRETE MANHOLE - 5 TO 10 FT DEEP	SDMNTTN UNIT			11	EA	$112,796	2004	100		2104
SD63	CONCRETE MANHOLE - 5 TO 10 FT DEEP	SDMNTTN UNIT			2	EA	$20,508	2014	100		2114
SE64	CONCRETE MANHOLE - 10 TO 15 FT DEEP	DRYWELL			13	EA	$166,274	1990	100		2090
SE64	CONCRETE MANHOLE - 10 TO 15 FT DEEP	DRYWELL			41	EA	$524,404	2004	100		2104
SE64	CONCRETE MANHOLE - 10 TO 15 FT DEEP	DRYWELL			5	EA	$63,952	2014	100		2114
						Grand Total:	**$3,034,600**				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. CA00 for DR

No Projected Component Replacement Cost for Asset No. CA00 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,375	SY	$6,987	2019
	2019	PROJECTED COMPONENT REPLACEMENT COST			$6,987	

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		795	SY	$3,329	2020
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,492	SY	$18,277	2020
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	1990	41	EA	$54,433	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$76,040	

No Projected Component Replacement Cost for Asset No. CA00 for 2021

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,060	SY	$4,709	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$4,709	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,190	SY	$5,445	2023
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,415	SY	$6,474	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$11,919	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	2004	1	EA	$1,494	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$1,494	

No Projected Component Replacement Cost for Asset No. CA00 for 2025

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

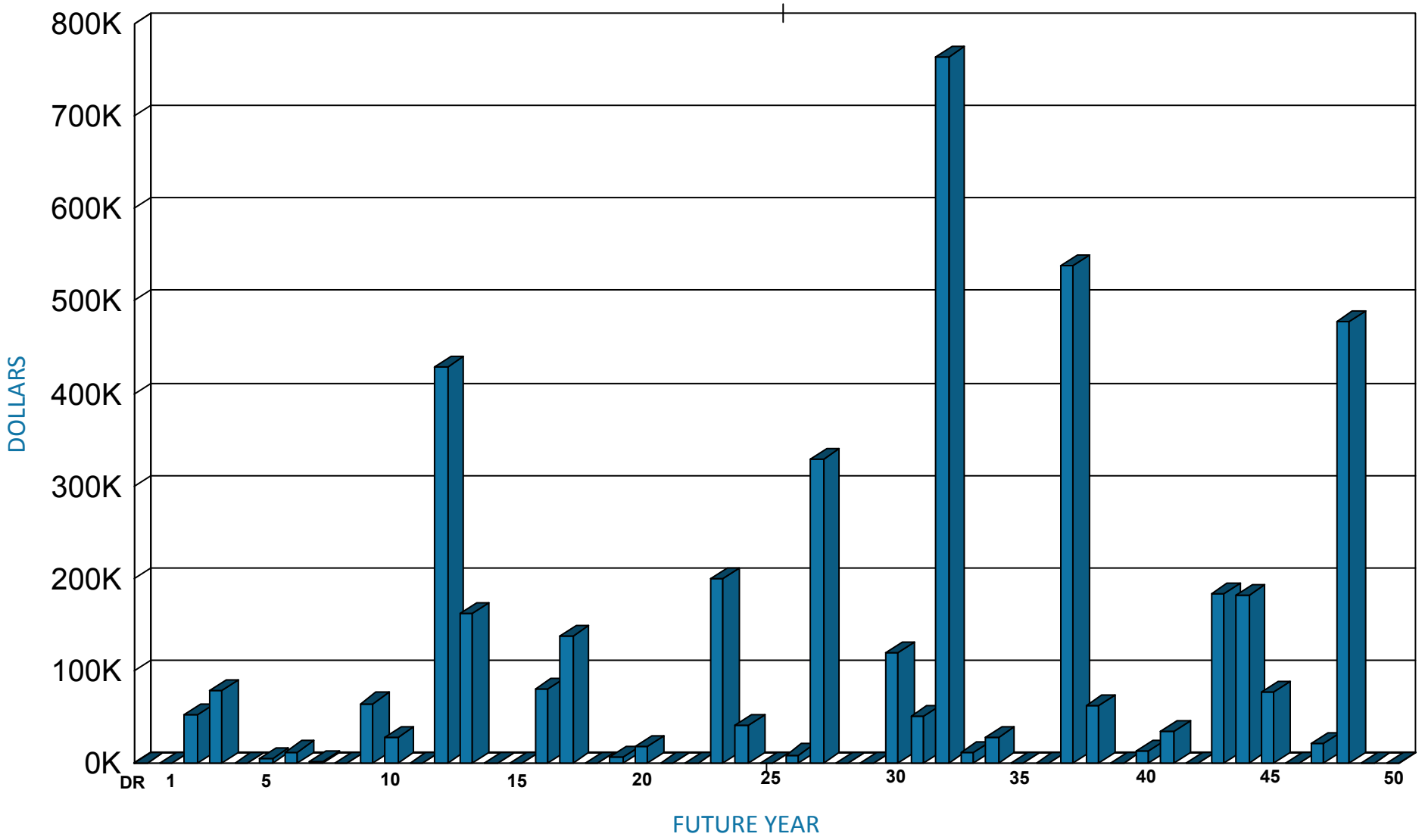
All costs shown as Future Value using a 3% average inflation rate

G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		10,820	SY	$54,098	2026
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,375	SY	$8,593	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$62,691	

2027

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		795	SY	$4,094	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,492	SY	$22,479	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$26,573	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $0.16

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SECTION 5

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CA00001a 8/22/2018
Entry signs on N. Killingsworth Street at Borthwick Mall
Main Campus

CA00002a 8/22/2018
Jessup Street at entrance to Parking Lot 1
Parking lot 1

CA00003a 8/22/2018
Entrance drive from Jessup Street
Parking lot 1

CA00004a 8/22/2018
Asphalt pavement with block cracking
Parking lot 1

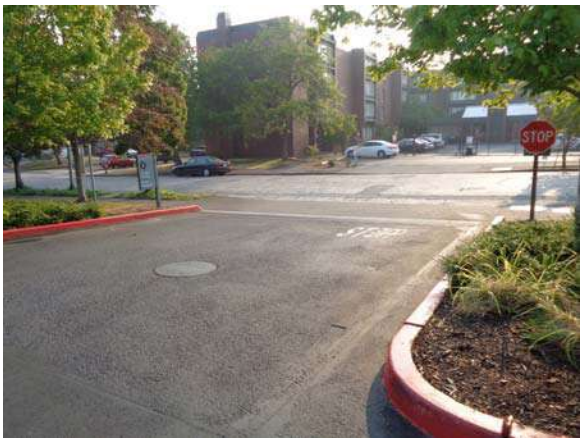
CA00005a 8/22/2018
Asphalt pavement with block cracking and large patch
Parking lot 1

CA00006a 8/22/2018
West entrance drive from Albina Avenue
Parking lot 1

CA00007a 8/22/2018
Asphalt pavement, northwest addition
Parking lot 1

CA00008a 8/22/2018
Asphalt pavement with large patched areas
Parking lot 1

CA00009a 8/22/2018
Asphalt pavement with block cracking at east end
Parking lot 1



CA00010a 8/22/2018
East entrance drive from Kerby Avenue
Parking lot 1

CA00011a 8/22/2018
Asphalt pavement, main drive looking west
Parking lot 1

CA00012a 8/22/2018
Parking lot entrances from Kerby-Commercial Avenue Alley
Parking lot 2

CA00013a 8/22/2018
North parking lot entrance
Parking lot 2

CA00014a 8/22/2018
Asphalt parking lot pavement with isolated block cracking
Parking lot 2

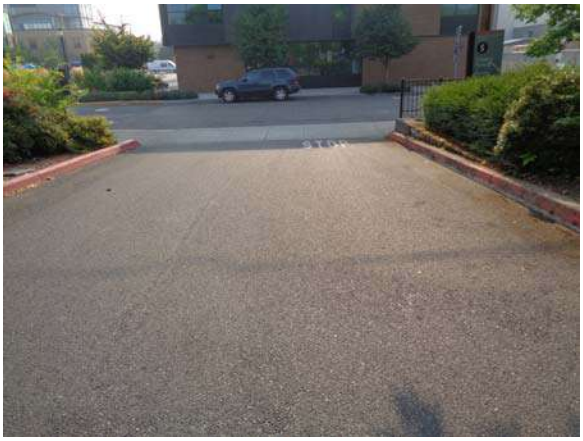
CA00015a 8/22/2018
South parking lot entrance
Parking lot 2

CA00016a 8/22/2018
South parking lot entrance from N. Killingsworth Court
Parking lot 3

CA00017a 8/22/2018
Overall view of asphalt pavement
Parking lot 3

CA00018a 8/22/2018
Asphalt pavement, main drive
Parking lot 3

CA00019a 8/22/2018
East entrance drive from Kerby Avenue
Parking lot 3



CA00020a 8/22/2018
East entrance drive from Mississippi Avenue
Parking lot 5

CA00021a 8/22/2018
Main drive looking west with isolated block cracking
Parking lot 5

CA00022a 8/22/2018
Asphalt pavement in drive lane, parking stalls
Parking lot 5

CA00023a 8/22/2018
West entrance drive from Michigan Avenue
Parking lot 5

CA00024a 8/22/2018
Asphalt pavement in drive lane, parking stalls
Parking lot 5

CA00025a 8/22/2018
Depression in southwest corner near storm drain inlet
Parking lot 5

CA00026a 8/22/2018
Overall view of asphalt pavement
Parking lot 5

CA00027a 8/22/2018
Asphalt pavement in parking stalls
Parking lot 6

CA00028a 8/22/2018
General view of parking lot, looking south
Parking lot 6

CA00029a 8/22/2018
Parking lot entrance from Michigan Avenue
Parking lot 6

CA00030a 8/22/2018
Depression in entrance drive
Parking lot 6

CA00031a 8/22/2018
Entrance drive from Missouri Avenue
Parking lot 7

CA00032a 8/22/2018
Asphalt pavement in drive lane, parking stalls
Parking lot 7

CA00033a 8/22/2018
General view of parking lot, looking west
Parking lot 7

CA00034a 8/22/2018
Concrete walkway through parking lot
Parking lot 1

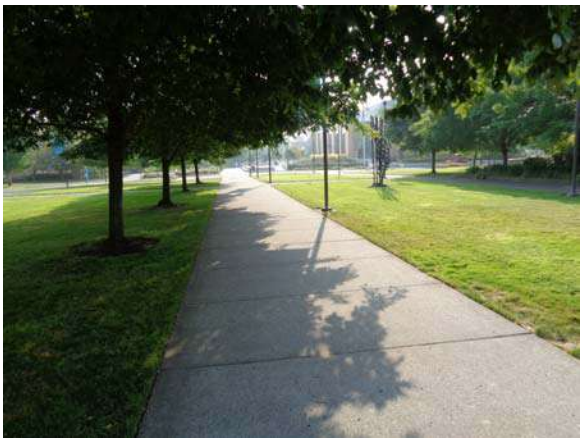
CA00035a 8/22/2018
Concrete plaza and walkways, looking east
East of Public Service Education Building

CA00036a 8/22/2018
Concrete plaza and walkways
South of Public Service Education Building

CA00037a 8/22/2018
Concrete walkway at parking garage entrance
East side of Mississippi Avenue

CA00038a 8/22/2018
Concrete paver walkway
North of Student Union

CA00039a 8/22/2018
Concrete paver plaza
South of Cascade Hall



CA00040a 8/22/2018
Concrete walkway through campus
South of Student Services Building

CA00041a 8/22/2018
Concrete plaza
North of Library

CA00042a 8/22/2018
Concrete plaza at center of campus
East of Moriarty Arts and Humanities Building

CA00043a 8/22/2018
Former roadway used as walkway and utility cuts
Borthwick Mall

CA00044a 8/22/2018
Utility cuts in asphalt walkway
Borthwick Mall

CA00045a 8/22/2018
Terraced plaza
North of Library

CA00046a 8/22/2018
Concrete walkway with bike racks
South of Terrell Hall

CA00047a 8/22/2018
Concrete sidewalk raised by tree roots
West of Jackson Hall

CA00048a 8/22/2018
Asphalt roadway through campus and narrow sidewalks
Kerby Avenue

CA00049a 8/22/2018

Concrete walkways

South of Jackson Hall

CA00050a 8/22/2018

Seating area next to garden with gravel paths

South of Jackson Hall

CA00051a 8/22/2018

Pole-mounted sodium vapor lights, two lamps per pole

Parking lot 1

CA00052a 8/22/2018

Pole-mounted sodium vapor light, one lamp per pole

Parking lot 1

CA00053a 8/22/2018

Pole-mounted sodium vapor light, one lamp per pole

Parking lot 2

CA00054a 8/22/2018

Pole-mounted LED light

Sidewalk at parking lot 2

CA00055a 8/22/2018
Pole-mounted sodium vapor light, one lamp per pole
Parking lot 3

CA00056a 8/22/2018
Pole-mounted LED light
Sidewalk at parking lot 3

CA00057a 8/22/2018
Pole-mounted LED light
Plaza at Public Service Education Building

CA00058a 8/22/2018
Pole-mounted sodium vapor lights, two lamps per pole
Parking lot 5

CA00059a 8/22/2018
Pole-mounted sodium vapor light, one lamp per pole
Parking lot 6

CA00060a 8/22/2018
Pole-mounted sodium vapor light, one lamp per pole
Parking lot 7

CA00061a 8/22/2018

Tall LED post light

South of Cascade Hall

CA00062a 8/22/2018

Pole-mounted sodium vapor light, one lamp per pole

Kerby Avenue

CA00063a 8/22/2018

Pole-mounted LED light

South of Jackson Hall

CA00064a 8/22/2018

Van accessible parking spaces with signs too low

Parking lot 1

CA00065a 8/22/2018

Accessible parking spaces with signs too low and lack of curb ramps

Parking lot 1

CA00066a 8/22/2018

Connection to public sidewalks and tactile warnings with lack of contrast

Parking lot 1

CA00067a 8/22/2018
Sidewalk with tactile warnings but no contrast
Parking lot 1

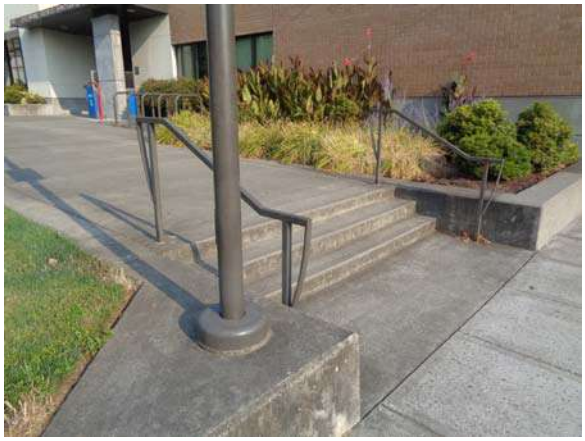
CA00068a 8/22/2018
Accessible parking spaces, one with no side aisle
Parking lot 1

CA00069a 8/22/2018
Accessible parking spaces and curb ramp with inadequate contrast
Parking lot 2

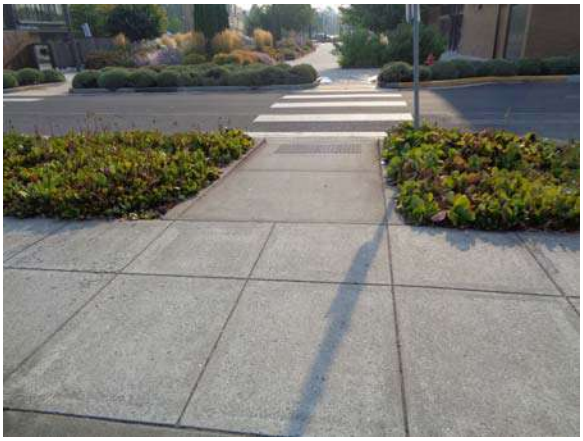
CA00070a 8/22/2018
Accessible parking spaces and curb ramp with inadequate contrast
Parking lot 2

CA00071a 8/22/2018
Parallel curb ramp with inadequate contrast on tactile strip
Parking lot 2

CA00072a 8/22/2018
Accessible parking spaces and curb ramp with inadequate contrast
Parking lot 3



CA00073a 8/22/2018
Steps near building entrance lacking wheelchair ramp
East of Public Service Education Building



CA00074a 8/22/2018
Crosswalk across Mississippi Avenue and tactile pad with inadequate contrast
East of Public Service Education Building

CA00075a 8/22/2018
Accessible parking spaces
Parking lot 5

CA00076a 8/22/2018
Walkway cut through landscape island and tactile pad with contrast
Parking lot 5

CA00077a 8/22/2018
Crosswalk not marked and no tactile warnings
Kerby Avenue

CA00078a 8/22/2018
Crosswalk not marked and no tactile warnings
Kerby Avenue

CA00079a 8/22/2018
Stormwater catch basin
Parking lot 1

CA00080a 8/22/2018
Stormwater catch basin and dry well manhole
Parking lot 1

CA00081a 8/22/2018
Dry well manhole cover
Parking lot 2

CA00082a 8/22/2018
Stormwater catch basin with filtration
Parking lot 3

CA00083a 8/22/2018
Stormwater catch basin with filtration
Parking lot 5

CA00084a 8/22/2018
Stormwater catch basin with filtration, dry well manhole cover
Parking lot 5

CA00085a 8/22/2018
Bioretention landscape island with curb cut inlet
Parking lot 6

CA00086a 8/22/2018
Bioretention landscape island with curb cut inlet
Parking lot 7

CA00087a 8/22/2018
Grassed lawn with dry well manhole cover
South of Student Services Building

CA00088a 8/22/2018
Stormwater catch basin with filtration
PCC shuttle stop, Kerby Avenue

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Student Services Building
Asset 2070

Inspected September 12, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

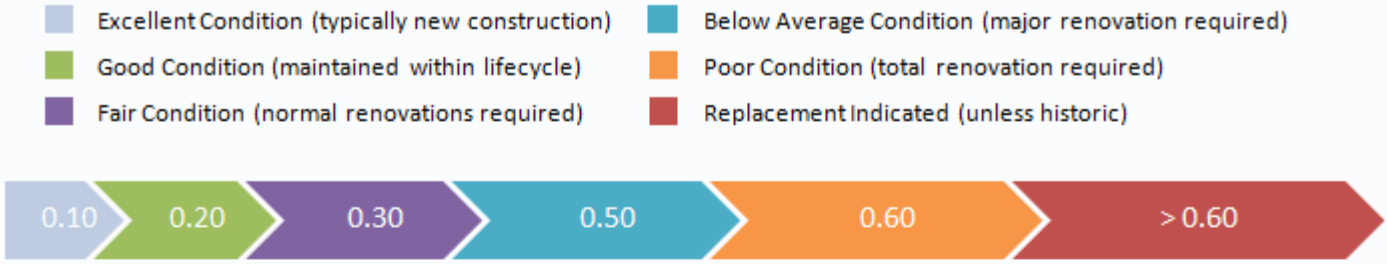
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

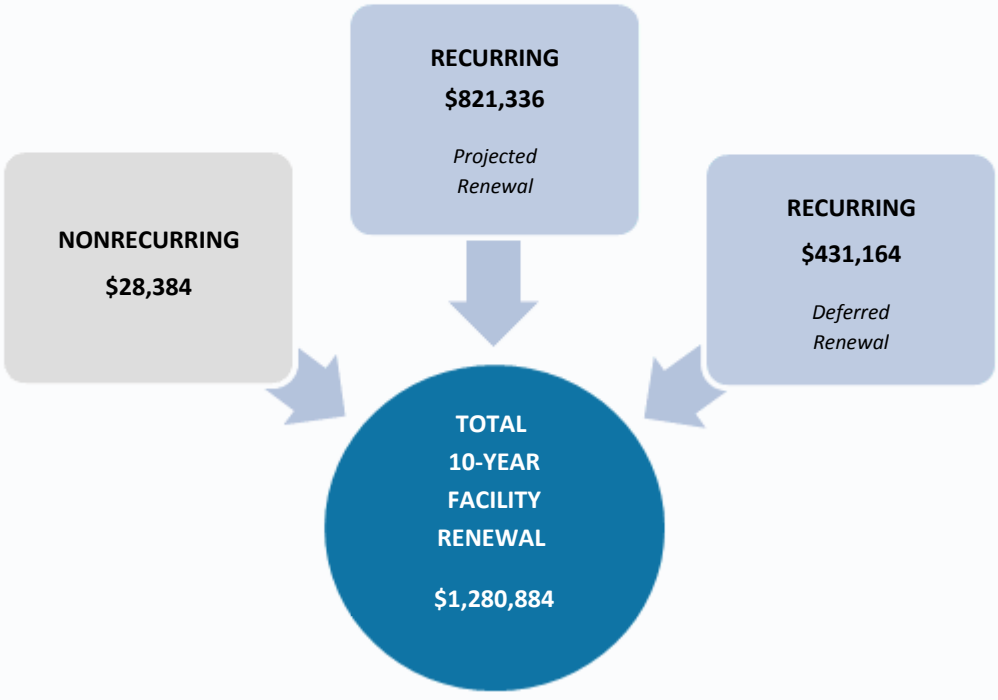
ASSET CODE	2070		
ASSET NAME	STUDENT SERVICES BUILDING	**CURRENT REPLACEMENT VALUE**	$14,501,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.09
YEAR BUILT	1996	**FACILITY CONDITION INDEX**	0.03
GSF	34,000	**10-YEAR $/SF**	37.67
INSPECTION DATE	09/12/2018		

FCNI Scale

The FCNI for this asset is **0.09**



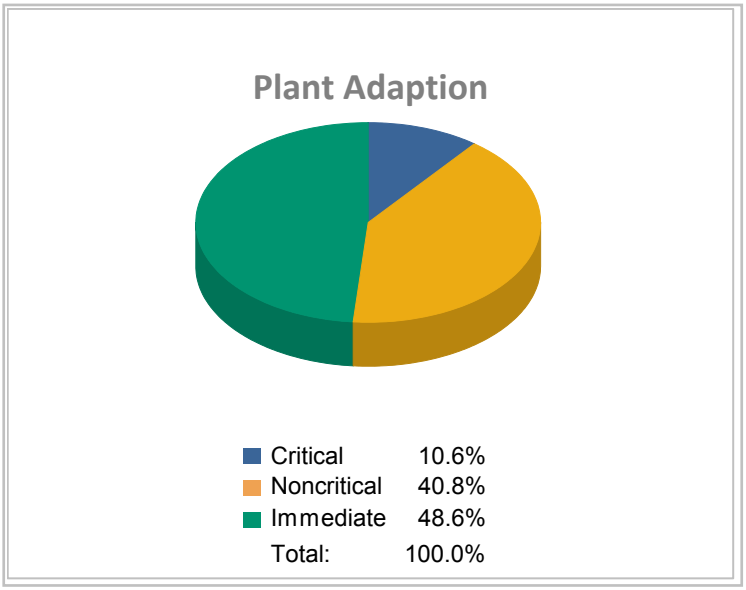
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

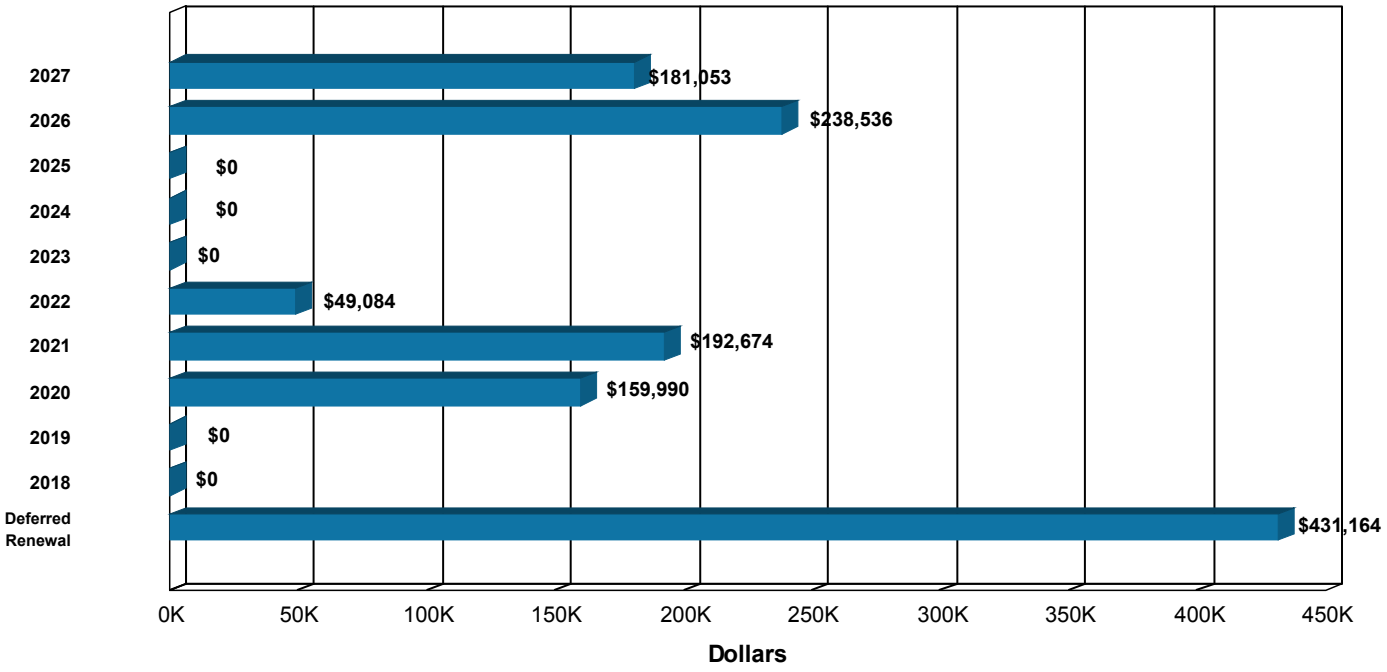
PLANT ADAPTION	
1 - Immediate	**$13,799**
2 - Critical	**$3,011**
3 - Noncritical	**$11,574**



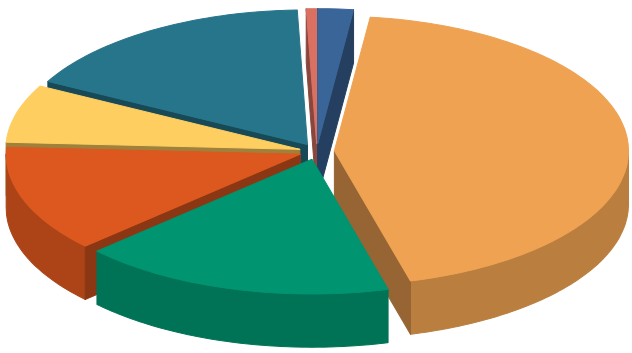
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$23,156	2%
Electrical	$563,172	44%
Exterior	$220,270	17%
Fire/Life Safety	$165,218	13%
Health	$0	0%
HVAC	$89,177	7%
Interiors	$213,101	17%
Plumbing	$6,792	1%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,280,884**	

ASSET SUMMARY

The Student Services Building is a three-story, 34,000 square foot office building constructed in 1996 and renovated in 2015. It houses many of the student support functions for the Portland Community College, Cascade campus such as the Bursar, Registrar, New Student Orientation, Academic Advising, and Career Services. The building is located across North Albina Avenue from Cascade Hall and north of the Moriarty Arts and Humanities Building. The structure has flat roofs and a bow-truss roof over the third floor. The exterior walls are clad in brick with bands of cast stone and metal siding around the top of a mechanical penthouse.

Information for this report was gathered during a site visit conducted on September 12, 2018.

Site

The Student Services Building is on the south side of North Jessup Street east of North Albina Avenue. The site is flat and bordered on the north and west sides by concrete pedestrian city sidewalks and the south and east sides by campus sidewalks. Parking is provided in nearby campus parking lots. Landscaping includes lawn areas, ornamental planting, and mature trees, all in good condition.

Exterior Structure

The roofing systems include an asphaltic membrane with aluminized coating, a bow-truss roof of standing seam metal, and a small unballasted single-ply roof over the south main entrance. The metal roof and the unballasted single-ply roofs are in good condition and should not need any work in the next ten years. The asphaltic roofing membranes are in acceptable condition for their apparent age, but they are expected to reach the end of their anticipated lifecycle in the next ten years and are recommended for replacement. The metal roof has gutters and downspouts which are also due for replacement. The exterior walls are brick veneer with stone accent bands and a small amount of corrugated metal siding, all of which are in good condition. Windows are metal-framed insulating glass also in good condition. The aluminum and glass storefront doors will reach the end of their normal lifecycle in the next ten years and are recommended for refurbishment or replacement.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, ceramic tile, and colored concrete. The interior walls are painted, paneled wood, or finished with ceramic tile and the ceilings are painted hard surfaces and suspended acoustical tile. All of these finishes should last beyond the next ten years, although it is recommended that the painted walls be repainted within the next ten years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors are in good condition and should outlast the scope of this report. However, the associated panic hardware may need to be considered for replacement on a low priority basis. The casework in the break rooms and

work areas, as well as the reception desks and window seating, is in good condition with no recommendations.

Accessibility

This building was constructed in 1996 but renovated in 2015 and is in compliance with most current accessibility requirements. The entrances are at grade level and the main entrance has a powered door opener. The elevator has a compliant control panel, most of the door hardware and signage are compliant with accessibility standards and the restrooms provide the required accessible features. However, the mechanical penthouse and several utility spaces have doors with knob hardware which is a barrier to accessibility. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs. Additionally, the third floor has a single-level, nonaccessible drinking fountain that should be replaced with a dual-level unit and provided with side guards to protect vision impaired building occupants.

Current accessibility and life safety standards require that steps associated with a building should have handrails on both sides and that the handrails should continue beyond the top and bottom risers. The three stairs on the south and east sides of the building do not comply with these requirements. The existing rails should be modified and the missing handrail on the east side installed to comply with these requirements.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors on the first and third floors are adequately marked with illuminated exit signs, and the location, number, and size of the exits appear to be adequate for this facility. However, the penthouse lacks the required illuminated exit signs and these should be added as a maintenance task Emergency lighting is provided by select light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include mechanical and communications rooms. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide

adequate coverage and is in good condition although it will reach the end of its service life within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition.

HVAC

A circa 2000 Weil-McLain gas-fired boiler produces heating hot water and has a heating capacity of 1,703 MBH. An expansion tank supports the heating equipment. Chilled water is provided by an air-cooled chiller installed in 2012 that provides 125 tons of cooling. Pumps circulate the heating hot water and chilled water throughout. This HVAC equipment is in adequate condition and the boiler and chiller have remaining service life. However, the pumps will reach the end of their service life toward the end of the next ten years and may need to be replaced on a low priority basis.

An indoor air handling unit (AHU) to provides tempered air throughout. The unit is equipped with chilled water coils and hot water coils and a return fan supports the AHU. Controls are a Honeywell digital application and the distribution equipment is constructed of metal ductwork and believed to contain reheat coils. The HVAC equipment is in good condition and has remaining service life. However, a partial control upgrade should be anticipated based on age. Cooling is also provided by two split systems in select rooms. These Mitsubishi units are charged with DX refrigerant and in good condition. They have substantial remaining service life.

Facility exhaust is provided by rooftop centrifugal fans which serve restrooms and general exhaust needs. The exhaust fans date to 1996 and are in good condition. Based on age, they will reach lifecycle depletion within the scope of this report.

Electrical

Power is supplied via underground utilities at 480/277 volts to an 800 amp main switchboard in room E1-01. The main electrical equipment is in good condition and has substantial remaining service life. The electrical distribution system consists of panelboards, a motor control center (MCC), and dry-type transformers. Power is supplied by select panelboards and the MCC at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased. It has substantial remaining service life although the MCC will reach lifecycle depletion in the next five years and should be considered for upgrade.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures equipped with acrylic, parabolic, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting is believed to be original and has upgraded ballasts. While the fixtures are in good

condition, they have reached the end of their recommended service life and the lighting should be upgraded.

The exterior lighting consists of eave-mounted, non-HID light fixtures and wall-mounted, HID fixtures. Additional lighting is provided by pole-mounted fixtures on the site and from the surrounding grounds. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage and is in good condition. However, some of the fixtures may need to be considered for replacement within the scope of the report due to age.

Emergency power is provided by a district source. Two automatic transfer switches provide the power for distribution. The emergency power equipment is new and in excellent condition. The automatic transfer switches should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the supply fan and return fan. The VFDs are believed to be original and have reached the end of their service life.

Plumbing

Domestic water is supplied through a copper piping network. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems are in good condition and no issues were reported during the site visit.

Domestic hot water is produced by an A.O. Smith commercial-grade, gas-fired water heater that has a heating capacity of 199 MBH. An expansion tank and small pump are utilized by the unit. The domestic water heating equipment is in excellent condition with no recommendations. Additionally, two instantaneous water heaters serve select sinks. While the units are in adequate condition, they have reached the end of their service life.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. The counter-mounted lavatories on the third floor and the kitchen sinks are at, or near, the end of their expected lifecycle and recommended for replacement. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

This three-story facility has a ThyssenKrupp hydraulic passenger elevator that was installed in 2012. The unit has a car capacity of 2,100 pounds and is controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

September 12, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	8,571	3,011	11,574	0	0	0	0	0	0	0	0	0	0	0	$23,156
EXTERIOR	0	0	0	15,356	0	0	0	27,200	0	0	0	0	177,713	0	$220,270
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	32,048	181,053	$213,101
PLUMBING	0	0	0	5,070	0	0	0	1,721	0	0	0	0	0	0	$6,792
HVAC	0	0	0	0	0	0	0	11,318	49,084	0	0	0	28,774	0	$89,177
FIRE/LIFE SAFETY	5,228	0	0	0	0	0	159,990	0	0	0	0	0	0	0	$165,218
ELECTRICAL	0	0	0	410,737	0	0	0	152,434	0	0	0	0	0	0	$563,172
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$13,799	$3,011	$11,574	$431,164	$0	$0	$159,990	$192,674	$49,084	$0	$0	$0	$238,536	$181,053	$1,280,884
TOTAL NONRECURRING PROJECT NEEDS			$28,384	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,252,500	

CURRENT REPLACEMENT VALUE	$14,501,000
FACILITY CONDITION NEEDS INDEX	0.09
FACILITY CONDITION INDEX	0.03

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
34,000	$1,280,884	$37.67

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$23,156	$0	$23,156
EXTERIOR	$0	$220,270	$220,270
INTERIOR	$0	$213,101	$213,101
PLUMBING	$0	$6,792	$6,792
HVAC	$0	$89,177	$89,177
FIRE/LIFE SAFETY	$5,228	$159,990	$165,218
ELECTRICAL	$0	$563,172	$563,172
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$28,384**	**$1,252,500**	**$1,280,884**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2070AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	8,571
2070FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	5,228
2070AC03	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	3,011
2070AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	11,574
				TOTAL	**$28,384**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2070	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	1,893
2070	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	8,309
2070	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED				B3010	Deferred Renewal	5,154
2070	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	3,090
2070	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		103D	D2020	Deferred Renewal	990
2070	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		209B	D2020	Deferred Renewal	990
2070	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RF-1	0000003514	PENTHOUSE	D5010	Deferred Renewal	7,904
2070	VF10	VARIABLE FREQUENCY DRIVE (50-75 HP)	SF-1	0000003515	PENTHOUSE	D5010	Deferred Renewal	15,624
2070	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	Deferred Renewal	5,401
2070	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	Deferred Renewal	381,809
2070	FA01	FIRE ALARM SYSTEM - DEVICES			E1-02	D4030	2020	146,133
2070	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		E1-02	D4030	2020	13,857
2070	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PWR ASSIST			B2030	2021	6,044
2070	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			B2030	2021	21,156
2070	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				D2010	2021	1,721
2070	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000002980	ROOF	D3040	2021	3,773

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2070	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000002983	ROOF	D3040	2021	3,773
2070	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000002979	ROOF	D3040	2021	3,773
2070	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	0000003504	PENTHOUSE	D5010	2021	152,434
2070	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2022	32,052
2070	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2022	17,031
2070	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	2026	177,713
2070	DR26	DOOR PANIC HARDWARE, INTERIOR				C1020	2026	32,048
2070	PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000003506	PENTHOUSE	D3040	2026	8,463
2070	PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000003507	PENTHOUSE	D3040	2026	8,463
2070	PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	0000006854	PENTHOUSE	D3040	2026	11,848
2070	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2027	181,053
							TOTAL	**$1,252,500**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2070FS01	ELIMINATE FIRE RATING COMPROMISES	1	$5,228
2	2070AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	1	$8,571
3	2070AC03	INTERIOR DOOR ACCESSIBILITY UPGRADES	2	$3,011
4	2070AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$11,574
		TOTAL FOR PLANT ADAPTION		**$28,384**
		GRAND TOTAL:		**$28,384**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	2070AC01	1	Plant Adaption	BUILDING ENTRY ACCESSIBILITY UPGRADES	$8,571
3	2070AC03	2	Plant Adaption	INTERIOR DOOR ACCESSIBILITY UPGRADES	$3,011
4	2070AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$11,574
				TOTAL FOR ACCESSIBILITY	**$23,156**
1	2070FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$5,228
				TOTAL FOR FIRE/LIFE SAFETY	**$5,228**
				GRAND TOTAL:	**$28,384**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	2070FS01
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	12/13/2018

Category Code: FS5C

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1,2,3

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include mechanical and communications rooms. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	34,000	$0.03	$1,020	$0.08	$2,720	$3,740
Base Material/Labor Costs				**$1,020**		**$2,720**	
Indexed Material/Labor Costs				**$1,014**		**$2,742**	**$3,756**
Construction Mark Up at 20.0%							**$751**
Original Construction Cost							**$4,507**
Date of Original Estimate: 12/13/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,507**
Professional Fees at 16.0%							**$721**
TOTAL PROJECT COST							**$5,228**

All costs shown as Present Value

BUILDING ENTRY ACCESSIBILITY UPGRADES

Project Number:	2070AC01
Priority Sequence:	2
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	12/13/2018

Category Code: AC2A

System:	ACCESSIBILITY
Component:	BUILDING ENTRY
Element:	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	504.6,505	Not Applicable	Undefined: Floor(s) 1
IBC	1014		

Description

Current accessibility and life safety standards require that steps associated with a building should have handrails on both sides and that the handrails should continue beyond the top and bottom risers. The three stairs on the south and east sides of the building do not comply with these requirements. The existing rails should be modified and the missing handrail on the east side installed to comply with these requirements.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted	LF	20	$116	$2,321	$191	$3,820	$6,141
			Base Material/Labor Costs	**$2,321**		**$3,820**	
			Indexed Material/Labor Costs	**$2,307**		**$3,850**	**$6,157**
						Construction Mark Up at 20.0%	**$1,231**
						Original Construction Cost	**$7,389**
Date of Original Estimate: 12/13/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$7,389**
						Professional Fees at 16.0%	**$1,182**
						TOTAL PROJECT COST	**$8,571**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	2070AC03
Priority Sequence:	3
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/13/2018

Category Code: AC3C

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	Not Applicable	Floor-wide: Floor(s) 1,2,3

Description

The knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant commercial-grade door hardware	EA	4	$387	$1,548	$155	$620	$2,168
Base Material/Labor Costs				**$1,548**		**$620**	
Indexed Material/Labor Costs				**$1,538**		**$625**	**$2,163**
Construction Mark Up at 20.0%							**$433**
Original Construction Cost							**$2,596**
Date of Original Estimate: 12/13/2018						**Inflation**	**$0**
Current Year Construction Cost							**$2,596**
Professional Fees at 16.0%							**$415**
TOTAL PROJECT COST							**$3,011**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	2070AC02	**Category Code:** AC3F	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/13/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,3

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountains on the first and third floors is a barrier to accessibility. They should be replaced with dual-level units and provided with side protection at the third floor unit.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	2	$1,549	$3,098	$476	$952	$4,051
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$4,031**		**$4,274**	
			Indexed Material/Labor Costs	**$4,006**		**$4,308**	**$8,314**
					Construction Mark Up at 20.0%		**$1,663**
					Original Construction Cost		**$9,977**
Date of Original Estimate: 12/13/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$9,977**
					Professional Fees at 16.0%		**$1,596**
					TOTAL PROJECT COST		**$11,574**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				1,640	SF	1.12	$24,991	1996	30	4	2030
WN03	GLASS, CURTAIN WALL, STANDARD				1,230	SF	1.12	$233,137	1996	60		2056
WN05	GLASS, STOREFRONT				2,870	SF	1.12	$405,203	1996	40		2036
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			7	LEAF	1.00	$21,156	1996	25		2021
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PWR ASSIST			2	LEAF	1.00	$6,044	1996	25		2021
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			8	EA	1.00	$54,162	2015	20	1	2036
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS		ENTRY	2	EA	1.00	$13,541	2015	20		2035
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	1.00	$1,893	1996	12	9	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				7	EA	1.00	$8,309	1996	12	9	DR
RR03	ROOF - 1-PLY, UNBALLASTED				280	SF	1.00	$3,314	2015	20		2035
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				8,500	SF	1.00	$177,713	1996	30		2026
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM				6,100	SF	1.00	$104,228	1996	40		2036
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED				270	LF	1.00	$5,154	1996	20	1	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			70	LEAF	1.00	$154,801	1996	60		2056
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	KNOB HDW			4	LEAF	1.00	$8,846	1996	60		2056

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			27	LEAF	1.00	$99,050	1996	60		2056
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				70	EA	1.00	$52,703	1996	35		2031
DR26	DOOR PANIC HARDWARE, INTERIOR				27	EA	1.00	$32,048	1996	30		2026
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS, BRK RMS	90	LF	1.00	$50,479	2015	30		2045
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	SEATING			34	LF	1.00	$19,070	2015	30		2045
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			RECEPTION	18	LF	1.00	$15,484	2015	40		2055
IW01	WALL FINISH - APPLIED, STANDARD				64,870	SF	1.00	$181,053	2015	12		2027
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				2,880	SF	1.00	$116,645	1996	60		2056
IW07	WALL FINISH - WOOD PANEL, PREMIUM				4,320	SF	1.00	$193,822	2015	80		2095
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				24,480	SF	1.00	$291,638	2015	12	1	2028
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				1,530	SF	1.00	$10,530	2015	20		2035
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL		RESTROOMS	500	SF	1.00	$17,633	1996	40		2036
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	2004 INSTALL		104	2,500	SF	1.00	$88,167	2004	40		2044
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			9,790	SF	1.00	$108,964	1996	45		2041
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2015 INSTALL			14,690	SF	1.00	$163,502	2015	45		2060

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				6,120	SF	1.00	$17,081	2015	24		2039
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	TAC32	0000004392	M1-02	1	EA	1.00	$257,984	2012	25		2037
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	1.00	$5,388	2015	25		2040
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				2	EA	1.00	$1,721	1996	25		2021
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				8	EA	1.00	$10,809	1996	35		2031
FX04	PLUMBING FIXTURE - SINK, KITCHEN				4	EA	1.00	$3,090	1996	20	1	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	1996	50		2046
FX10	PLUMBING FIXTURE - URINAL				4	EA	1.00	$4,315	1996	35		2031
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				10	EA	1.00	$16,950	1996	35		2031
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				34,000	SF	1.00	$389,330	1996	50		2046
TK06	EXPANSION TANK, STL PT (<20 GAL)	EXPANFLEX		PENTHOUSE	10	GAL	1.00	$1,008	2011	30		2041
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	A.O. SMITH	0000003510	PENTHOUSE	199	MBH	1.00	$16,468	2011	25		2036
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		103D	1	EA	1.00	$990	1996	10	11	DR
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		209B	1	EA	1.00	$990	2002	10	5	DR
PD02	DRAIN PIPING SYSTEM - CLASSROOM				34,000	SF	1.00	$584,131	1996	60		2056

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BL27	BOILER - GAS (1500-2400 MBH)	WEIL MCLAIN	0000003505	PENTHOUSE	1,703	MBH	1.00	$63,934	2000	28		2028
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	DAIKIN - MCQUAY	0000006855	ROOF	125	TON	1.00	$157,800	2012	30		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI		ROOF	2	TON	0.54	$2,473	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000002982	ROOF	3	TON	0.54	$3,709	2015	25		2040
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000006796	207	2	TON	0.54	$2,510	2015	30		2045
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI	0000005500	IDF2	3	TON	0.54	$3,030	2015	30		2045
AH13	AIR HANDLING UNIT - INDOOR (45-63 HP)	TEMTROL	0000002984	PENTHOUSE	60	HP	1.00	$279,516	1996	35		2031
FN06	FAN - AXIAL, RETURN, 1.5" SP (15-20 HP) 32,000 CFM			PENTHOUSE	20	HP	1.00	$35,438	1996	35		2031
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000002980	ROOF	1	EA	1.00	$3,773	1996	25		2021
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000002983	ROOF	1	EA	1.00	$3,773	1996	25		2021
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000002979	ROOF	1	EA	1.00	$3,773	1996	25		2021
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				34,000	SF	1.00	$1,209,523	1996	45		2041
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006853	PENTHOUSE	1	HP	1.00	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000003506	PENTHOUSE	5	HP	1.00	$8,463	1996	30		2026
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000003507	PENTHOUSE	5	HP	1.00	$8,463	1996	30		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	0000006854	PENTHOUSE	7	HP	1.00	$11,848	1996	30		2026
TK22	EXPANSION TANK, STL PT (27-49 GAL)		0000003509	PENTHOUSE	40	GAL	1.00	$2,221	1998	30		2028
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				34,000	SF	1.00	$115,184	2012	20		2032
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				34,000	SF	1.00	$32,052	2012	10		2022
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				34,000	SF	1.00	$17,031	2012	10		2022
FS01	FIRE SPRINKLER SYSTEM - WET				34,000	SF	1.00	$459,974	1996	80		2076
FA01	FIRE ALARM SYSTEM - DEVICES			E1-02	34,000	SF	1.00	$146,133	2002	18		2020
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		E1-02	1	EA	1.00	$13,857	2002	18		2020
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		E2-01	1	EA	1.00	$13,857	2010	18		2028
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	0000003504	PENTHOUSE	2	EA	1.00	$152,434	1996	25		2021
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				34,000	SF	1.00	$844,325	1996	50		2046
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	MDB	0000002394	E1-01	800	AMP	1.00	$58,271	1996	40		2036
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RF-1	0000003514	PENTHOUSE	20	HP	1.00	$7,904	1996	16	5	DR
VF10	VARIABLE FREQUENCY DRIVE (50-75 HP)	SF-1	0000003515	PENTHOUSE	60	HP	1.00	$15,624	1996	20	1	DR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			5	EA	1.00	$2,543	2015	20		2035

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			2	EA	1.00	$1,543	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			7	EA	1.00	$5,401	1996	20	1	DR
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	5	EA	1.00	$9,738	2010	40		2050
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	5	EA	1.00	$6,257	2010	20		2030
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				34,000	SF	1.00	$381,809	1996	20	1	DR
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-1 SSB	0000005228	E1-01	125	AMP	1.00	$4,963	2015	25		2040
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-2 SSB	0000005229	E1-01	125	AMP	1.00	$4,963	2015	25		2040
								Grand Total:	**$8,074,331**			

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$1,893	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		7	EA	$8,309	DR
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED		270	LF	$5,154	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		4	EA	$3,090	DR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$990	DR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX	1	EA	$990	DR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	RF-1	20	HP	$7,904	DR
D5010	VARIABLE FREQUENCY DRIVE (50-75 HP)	SF-1	60	HP	$15,624	DR
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	7	EA	$5,401	DR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		34,000	SF	$381,809	DR
				TOTAL DEFERRED RENEWAL COST	$431,164	

No Projected Component Replacement Cost for Asset No. 2070 for 2018

No Projected Component Replacement Cost for Asset No. 2070 for 2019

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$14,701	2020
D4030	FIRE ALARM SYSTEM - DEVICES		34,000	SF	$155,033	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$169,734	

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	2	EA	$166,569	2021
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	1	EA	$4,123	2021
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	1	EA	$4,123	2021
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	1	EA	$4,123	2021
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW	7	LEAF	$23,117	2021
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PWR ASSIST	2	LEAF	$6,605	2021
D2010	PLUMBING FIXTURE - LAVATORY, COUNTER		2	EA	$1,881	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$210,541	

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		34,000	SF	$19,169	2022
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		34,000	SF	$36,075	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$55,244**	

No Projected Component Replacement Cost for Asset No. 2070 for 2023

No Projected Component Replacement Cost for Asset No. 2070 for 2024

No Projected Component Replacement Cost for Asset No. 2070 for 2025

2026

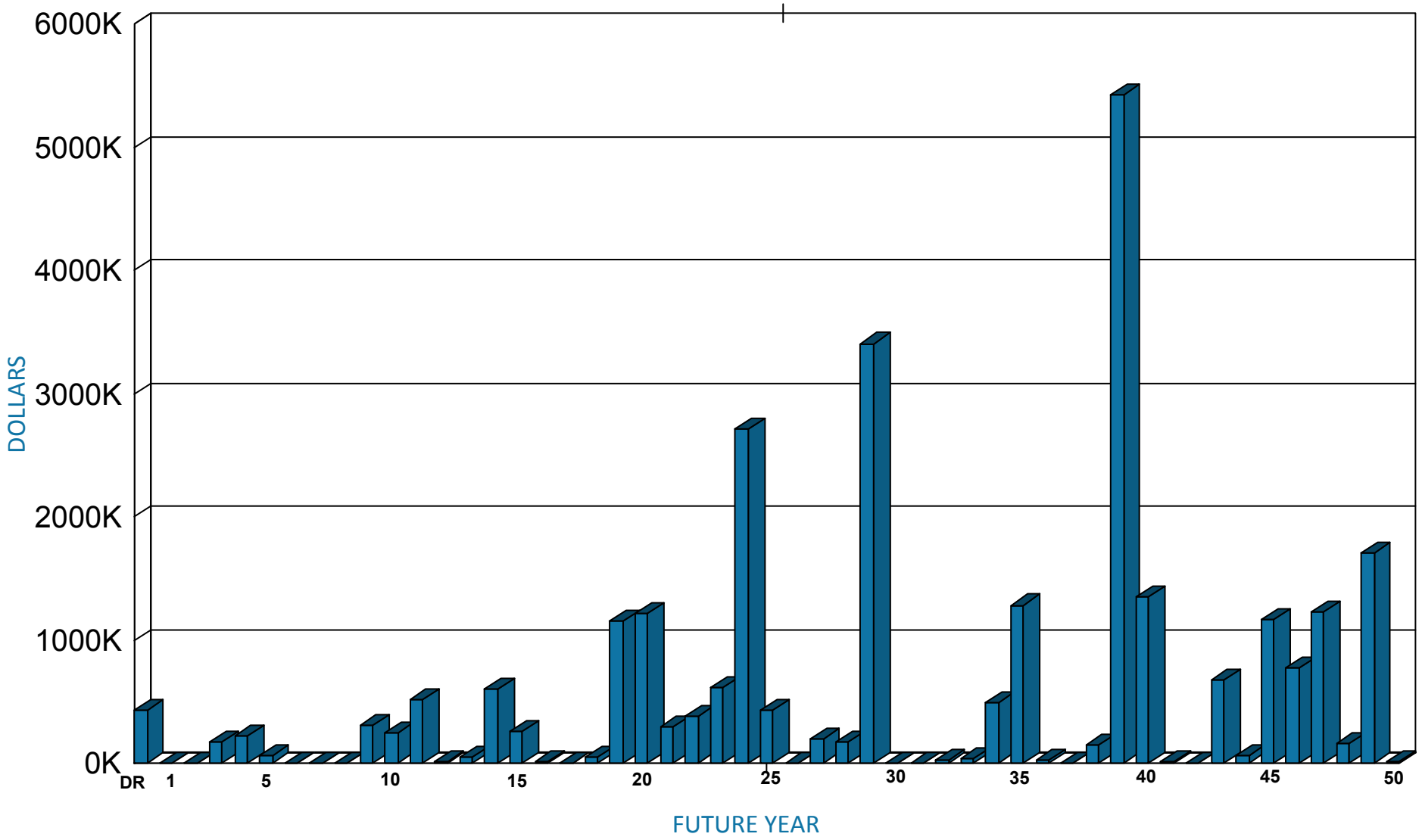
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	PUMP - ELECTRIC (<=10 HP)	HWP-2	5	HP	$10,721	2026
D3040	PUMP - ELECTRIC (<=10 HP)	HWP-1	5	HP	$10,721	2026
D3040	PUMP - ELECTRIC (<=10 HP)	CWP-1	7	HP	$15,009	2026
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		8,500	SF	$225,122	2026
C1020	DOOR PANIC HARDWARE, INTERIOR		27	EA	$40,597	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$302,170**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		64,870	SF	$236,233	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$236,233	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



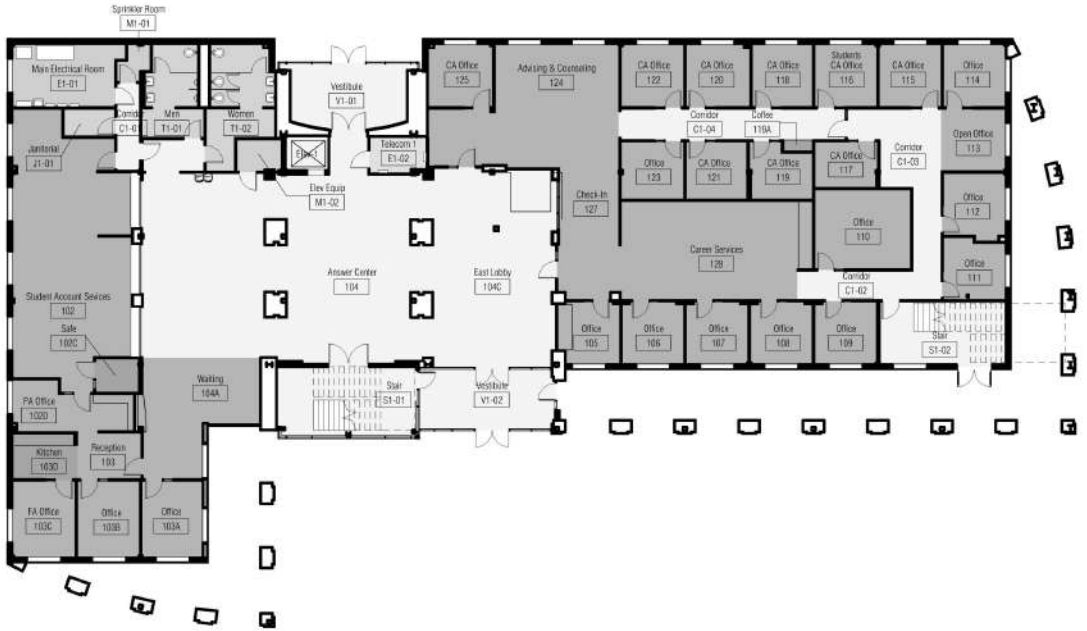
Average Annual Renewal Cost per SF $6.76

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



AC01 FS01

AC02 AC03

STUDENT SERVICES BUILDING

BLDG NO. 2070

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

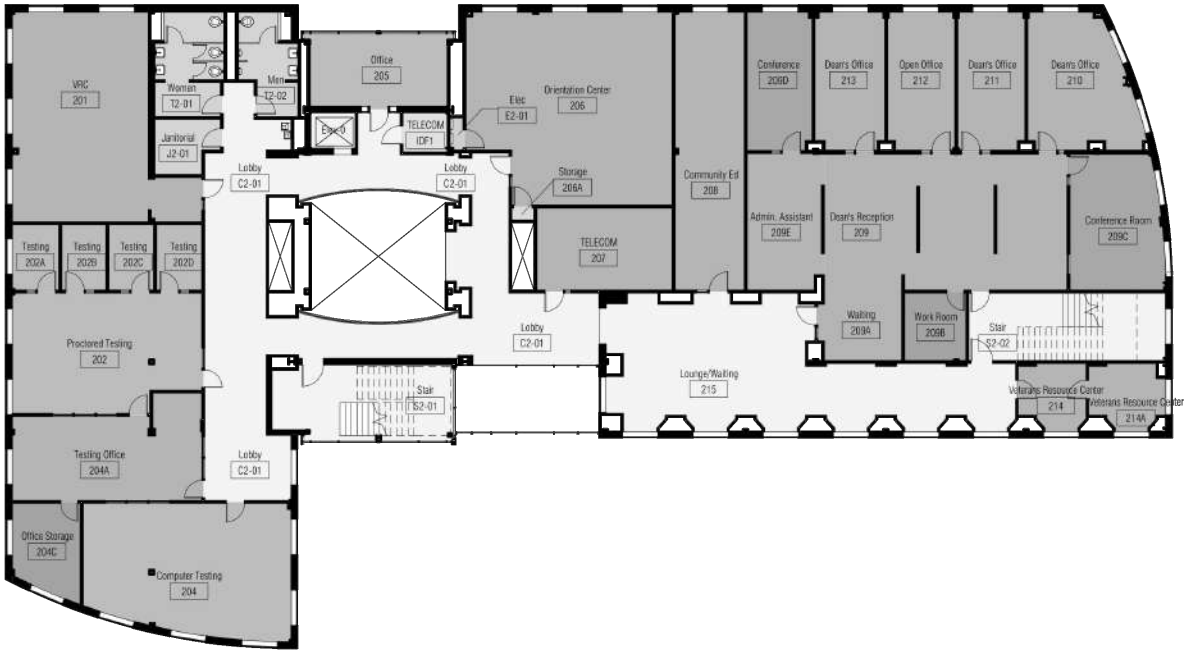
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE



FS01

AC03

STUDENT SERVICES BUILDING

BLDG NO. 2070

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

FS01

AC02 AC03

N

STUDENT SERVICES BUILDING

BLDG NO. 2070

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
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PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

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PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

2070001a 9/1/2018

Exterior finishes

South elevation

2070001e 9/12/2018

Car operating panel

Elevator cab

2070002a 9/1/2018

Exterior finishes at the third floor

West elevation

2070002e 9/12/2018

Fire extinguisher and interior lighting

Third floor, corridor

2070003a 9/1/2018

Exterior finishes at the main entrance

South elevation

2070003e 9/12/2018

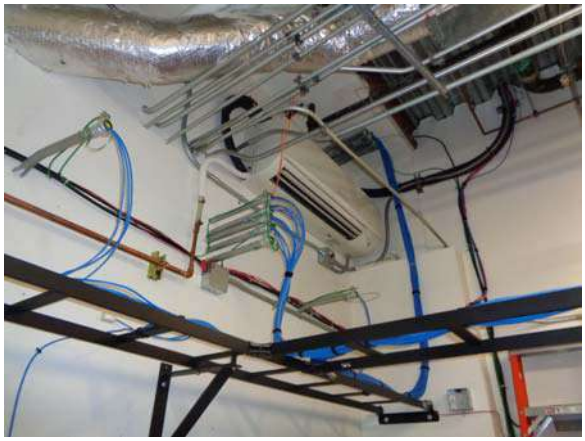
Interior lighting

Third floor, room 301

2070004a 9/1/2018

Exterior finishes at the main entrance

South elevation



2070004e 9/12/2018

Evaporator

Third floor, room 3

2070005a 9/1/2018

Typical conditions at the covered walkways

South elevation

2070005e 9/12/2018

Interior lighting

Third floor, room 312

2070006a 9/1/2018

Typical glazing and accent stone

South elevation

2070006e 9/12/2018

Interior lighting

Third floor, room 325

2070007a 9/1/2018

Exterior finishes

North elevation

2070007e 9/12/2018

Interior lighting

Third floor, room 324

2070008a 9/1/2018

Exterior finishes and site conditions

North elevation

2070008e 9/12/2018

Interior lighting

Third floor, room 323

2070009a 9/1/2018

Exterior finishes

East elevation

2070009e 9/12/2018

Interior lighting

Third floor, room 320

2070010a 9/1/2018

Steps with noncompliant handrails

East elevation

2070010e 9/12/2018

Condensing unit

Roof

2070011a 9/1/2018

Elevator with compliant control panel

Elevator

2070011e 9/12/2018

Panelboard

Roof, penthouse

2070012a 9/1/2018

Roof membrane and exterior glazing

Roof

2070012e 9/12/2018

Interior lighting

Roof, penthouse

2070013a 9/1/2018

Roof drain and overflow scupper

Roof

2070013e 9/12/2018

Unit heater

Roof, penthouse

2070014a 9/1/2018

Metal roof trim in need of repainting

Roof

2070014e 9/12/2018

Air handling unit

Roof, penthouse

2070015a 9/1/2018

Roof access from the third floor

Roof

2070015e 9/12/2018

Exhaust fan

Roof

2070016a 9/1/2018
Noncompliant drinking fountain
Corridor C3-01

2070016e 9/12/2018
Condensing unit
Roof

2070017a 9/1/2018
Water closet and accessories
Room T3-01

2070017e 9/12/2018
Exhaust fan
Roof

2070018a 9/1/2018
Lavatory and counter needing replacement
Room T3-01

2070018e 9/12/2018
Air-cooled chiller
Roof

2070019a 9/1/2018
Typical accessible compliant room signage
Room 301

2070019e 9/12/2018
Boiler
Roof, penthouse

2070020a 9/1/2018
Casework and sink
Room 311

2070020e 9/12/2018
Pump equipment
Roof, penthouse

2070021a 9/1/2018
Conference room interior finishes
Room 312

2070021e 9/12/2018
Pump equipment
Roof, penthouse

2070022a 9/1/2018

Suite entrance doors with compliant hardware and powered door operator

Room 313

2070022e 9/12/2018

Motor control center

Roof, penthouse

2070023a 9/1/2018

Stair with compliant railings

Stair S3-01

2070023e 9/12/2018

Water heater and expansion tank

Roof, penthouse

2070024a 9/1/2018

Unfirestopped penetrations

Room IDF2

2070024e 9/12/2018

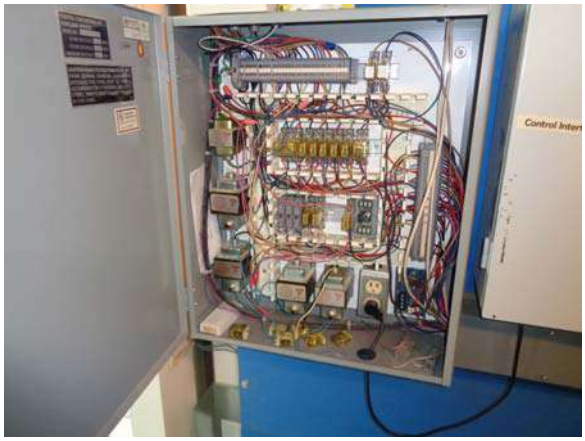
Pump equipment

Roof, penthouse

2070025a 9/1/2018

Office suite typical finishes

Room 323



2070025e 9/12/2018

HVAC control panel

Roof, penthouse

2070026a 9/1/2018

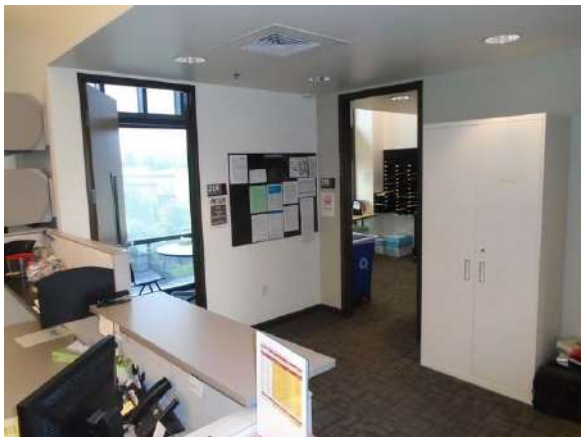
Utility sink

Room J3-01

2070026e 9/12/2018

Interior lighting

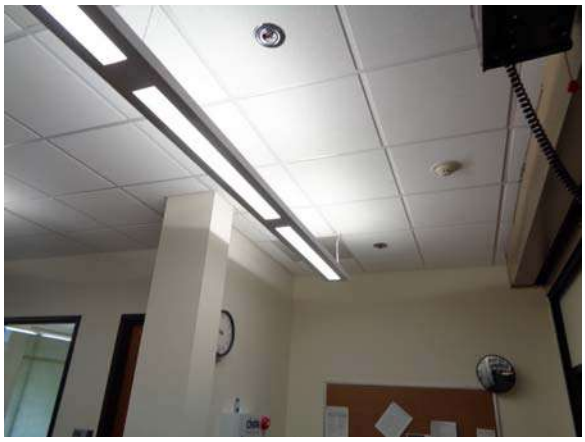
Second floor, room 203



2070027a 9/1/2018

Office area finishes

Room 323



2070027e 9/12/2018

Interior lighting

Second floor, room 204

2070028a 9/1/2018

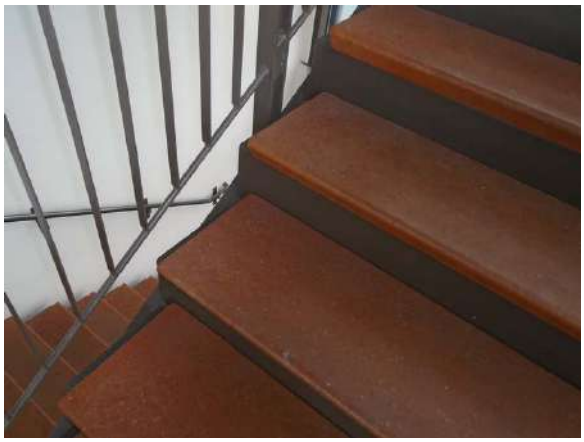
Roof overhang with gutter and downspout

Roof

2070028e 9/12/2018

Interior lighting

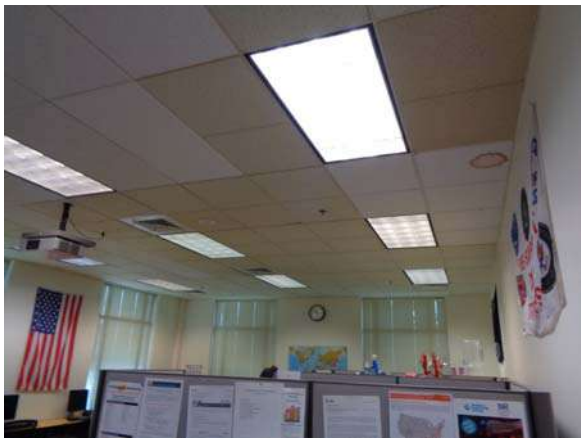
Second floor, room 202



2070029a 9/1/2018

Integral color concrete floor and treads

Stair S3-01



2070029e 9/12/2018

Interior lighting

Second floor, room 201

2070030a 9/1/2018

Penthouse door with noncompliant hardware

Penthouse

2070030e 9/12/2018

Sprinkler piping

Second floor, room J2-01

2070031a 9/1/2018

Penthouse door with noncompliant hardware and no exit sign

Penthouse

2070031e 9/12/2018

Wheelock panel

Second floor, room E2-01

2070032a 9/1/2018

Penthouse roof screen wall

Roof

2070032e 9/12/2018

Interior lighting

Second floor, room E2-01

2070033a 9/1/2018

Roof drain and overflow drain

Roof

2070033e 9/12/2018

Interior lighting

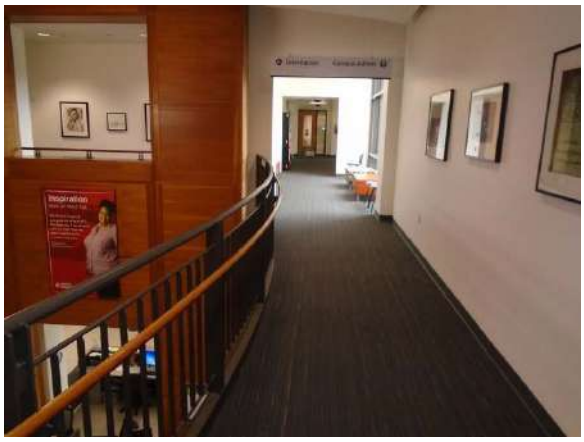
Second floor, room 205

2070034a 9/1/2018
Roof access and membrane condition
Roof

2070034e 9/12/2018
Evaporator
Second floor, room 207

2070035a 9/1/2018
Roof membrane condition
Roof

2070035e 9/12/2018
Instant water heater
Second floor, room 209B

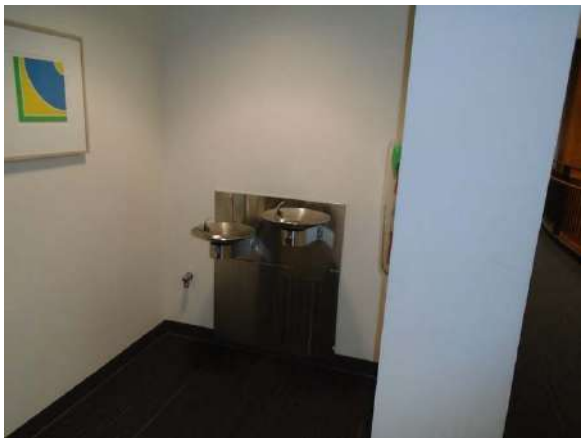


2070036a 9/1/2018
Guardrail at the atrium
Lobby C2-01

2070036e 9/12/2018
Exterior lighting
Breezeway

2070037a 9/1/2018
Office door with compliant hardware and signage
Lobby C2-01

2070037e 9/12/2018
Exterior lighting
Breezeway



2070038a 9/1/2018
Accessible drinking fountains
Lobby C2-01

2070038e 9/12/2018
Interior lighting
First floor, room 104

2070039a 9/1/2018
Utility sink
Room J2-01

2070039e 9/12/2018
Digital thermostat
First floor, room 104

2070040a 9/1/2018

Urinals, screens, and finishes

Room T2-02

2070040e 9/12/2018

Fire alarm panel

First floor, room E1-02

2070041a 9/1/2018

Accessible water closet and accessories

Room T2-02

2070041e 9/12/2018

Panelboard

First floor, room E1-02

2070042a 9/1/2018

Lavatories and finishes

Room T2-02

2070042e 9/12/2018

Interior lighting

First floor, room E1-02

2070043a 9/1/2018

Wall finishes in the atrium

Lobby C2-01

2070043e 9/12/2018

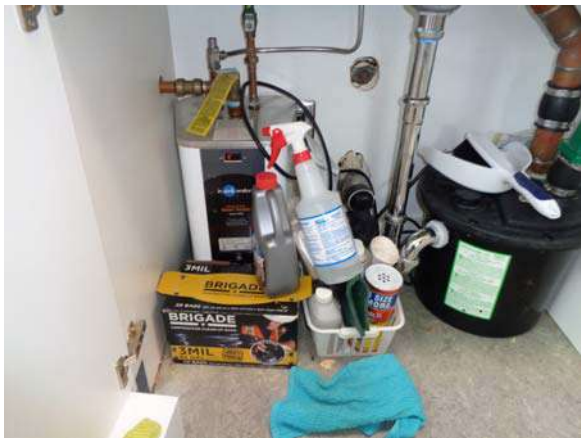
Elevator machine and controller

First floor, room M1-02

2070044a 9/1/2018

Lobby area finishes

Lobby C2-01



2070044e 9/12/2018

Instant water heater

First floor, room 103D

2070045a 9/1/2018

Typical fire-rated door

Room 208

2070045e 9/12/2018

ATS

First floor, room E1-01

2070046a 9/1/2018

Seating and area finishes

Lobby C2-01

2070046e 9/12/2018

Switchboard

First floor, room E1-01

2070047a 9/1/2018

Casework and sink

Room 209B

2070047e 9/12/2018

Transformer

First floor, room E1-01

2070048a 9/1/2018

Stair with compliant railings

Stair S2-02

2070048e 9/12/2018

Panelboard

First floor, room E1-01

2070049a 9/1/2018

Casework and sink

Corridor C1-04

2070049e 9/12/2018

Panelboards

First floor, room E1-01

2070050a 9/1/2018

Reception area casework

Room 124

2070050e 9/12/2018

Sprinkler piping

First floor, room M1-01

2070051a 9/1/2018

Stair and fire doors

Lobby 104

2070051e 9/12/2018

Exterior lighting

South elevation

2070052a 9/1/2018

Entrance doors and hardware

Room V1-01

2070052e 9/12/2018

Exterior lighting

Breezeway

2070053a 9/1/2018

Atrium area finishes

Lobby 104

2070053e 9/12/2018

Exterior lighting

Breezeway

2070054a 9/1/2018

Door with noncompliant hardware

Room M1-02

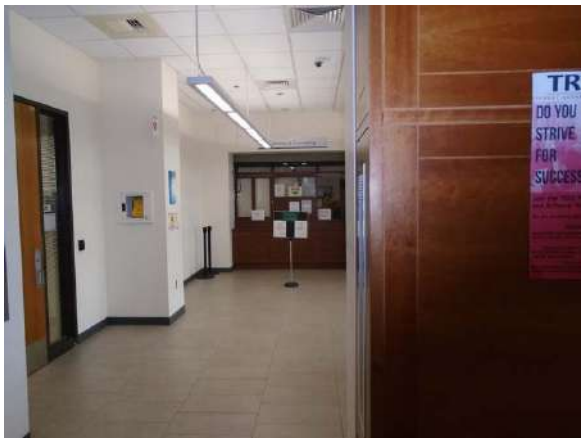
2070054e 9/12/2018

Exterior lighting

West elevation

2070055a 9/1/2018
Noncompliant drinking fountain
Lobby 104

2070055e 9/12/2018
Exterior lighting
South elevation



2070056a 9/1/2018
Typical lobby finishes
Lobby 104

2070056e 9/12/2018
Exterior lighting
Site

2070057a 9/1/2018
Casework and sink
Room 103D

2070058a 9/1/2018
Door with noncompliant hardware
Room E1-01

2070059a 9/1/2018

Accessible service counters

Lobby 104

2070060a 9/1/2018

Lavatories and area finishes

Room T1-01

2070061a 9/1/2018

Urinals and area finishes

Room T1-01

2070062a 9/1/2018

Accessible water closet and finishes

Room T1-01

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2070
Asset Name	Student Services Building
Year Built or Last Energy Renovation	1996

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

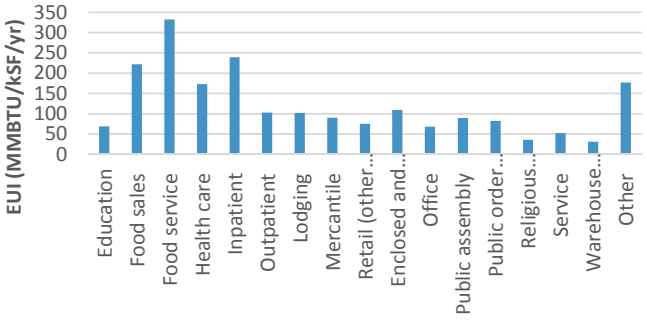
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**68.5**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48
Energy Efficient (consumes 10% to 30% less energy)	48 <= EUI <= 61.7
Similar (consumes within 10% less or 10% more energy)	61.7 < EUI < 75.4
Energy Inefficient (consumes 10% to 30% more energy)	75.4 <= EUI <= 89.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.1

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

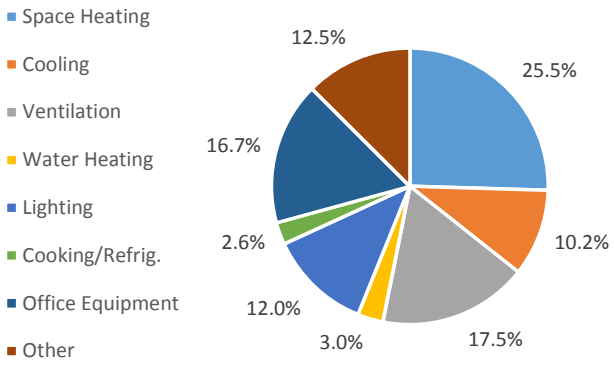


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	There are no ECM recommendations for this building	

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Student Union
Asset 2075

Inspected September 10, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

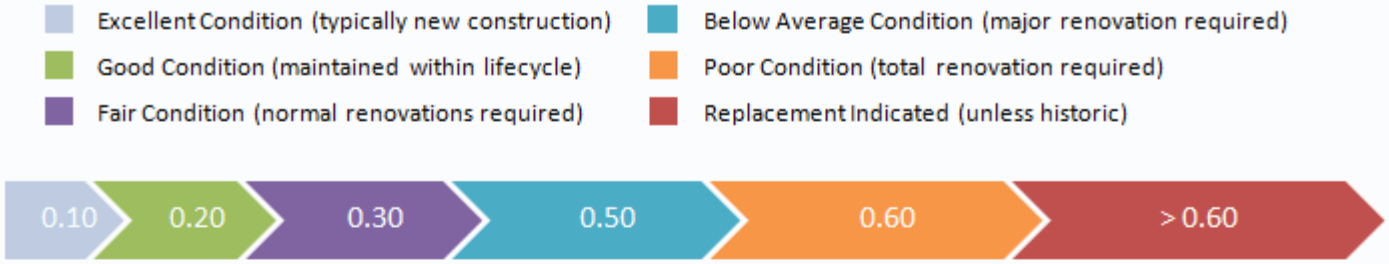
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

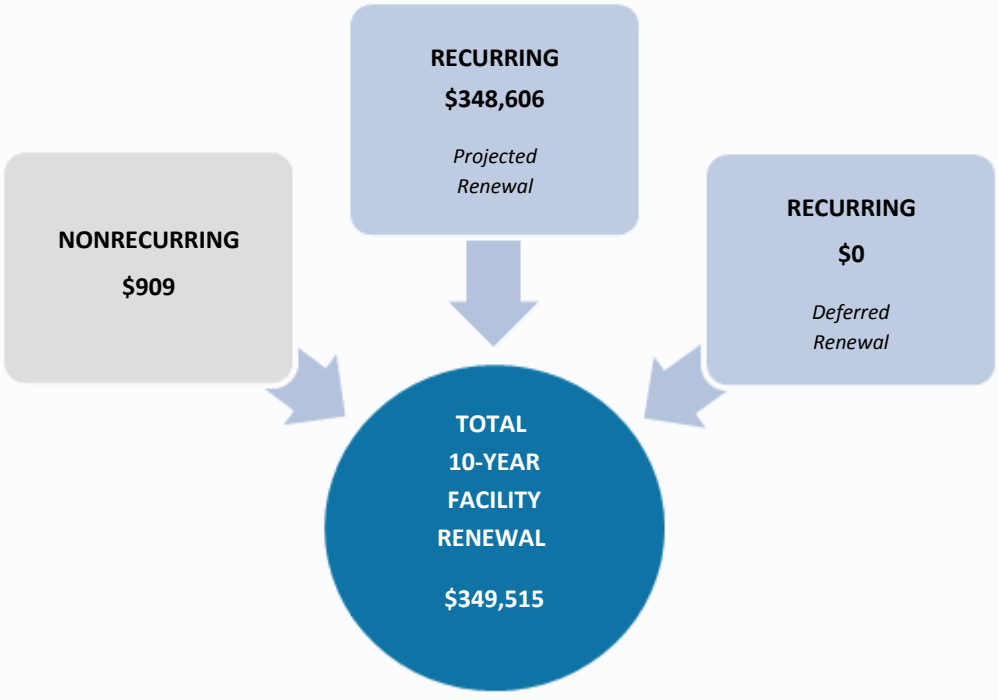
ASSET CODE	2075		
ASSET NAME	STUDENT UNION	**CURRENT REPLACEMENT VALUE**	$13,078,000
ASSET USE	Student Union	**FACILITY CONDITION NEEDS INDEX**	0.03
YEAR BUILT	2014	**FACILITY CONDITION INDEX**	0.00
GSF	37,606	**10-YEAR $/SF**	9.29
INSPECTION DATE	09/10/2018		

FCNI Scale

The FCNI for this asset is **0.03**



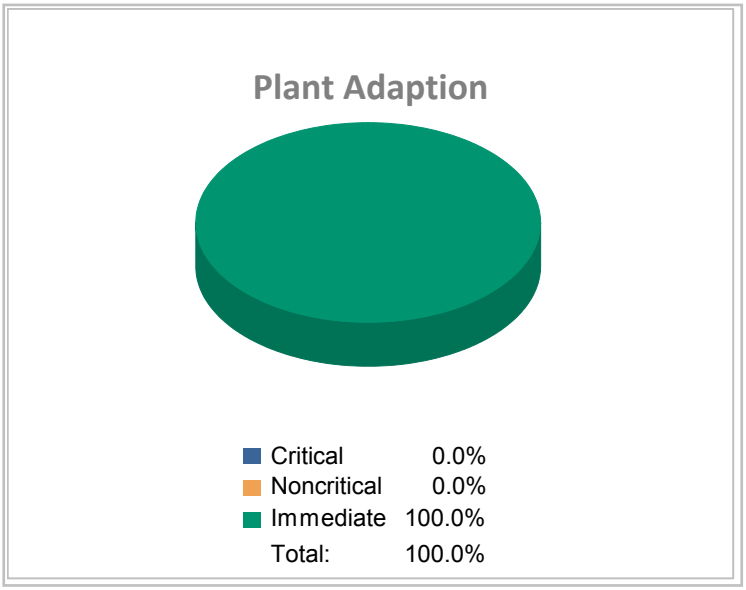
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

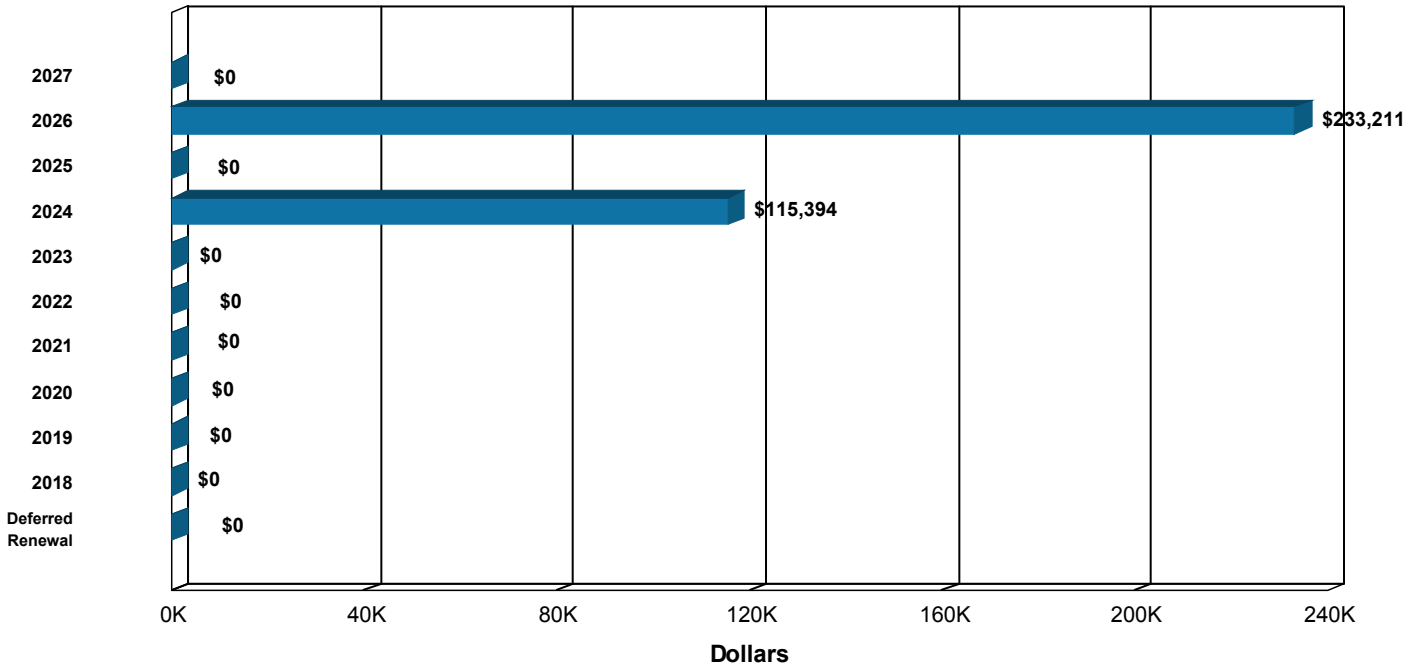
PLANT ADAPTION	
1 - Immediate	**$909**
2 - Critical	**$0**
3 - Noncritical	**$0**



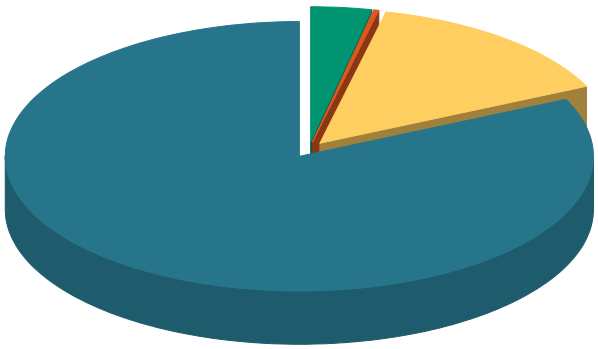
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$0	0%
Exterior	$11,854	3%
Fire/Life Safety	$909	0%
Health	$0	0%
HVAC	$50,409	14%
Interiors	$286,343	82%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$349,515**	

ASSET SUMMARY

The Student Union on the Portland Community College, Cascade campus is a 37,606 square-foot building constructed in 2014 along with the Underground Garage and Cascade Hall. This three-story building has flat roofs and exterior walls clad in brick and wood veneer. A dining facility occupies most of the ground floor and the upper floors are student activity spaces and facilities for student support functions.

Information for this report was gathered during a site visit conducted on September 10, 2018.

Site

The Student Union faces Cascade Hall across a plaza area which is the roof of the underground parking garage. The site is flat and surrounded on all sides by concrete pedestrian sidewalks and with mature and well maintained landscaping on the north side. The paving on the south side of the building provides service vehicle access and is in good condition.

Exterior Structure

The roof is an asphaltic membrane that is in good condition. Exterior walls are a combination of brick and wood veneer systems, also in good condition. The windows are storefront systems and the exterior doors are both flush hollow metal and aluminum and glass storefront. There is also a single overhead coiling door on the south side of the building. All of these exterior finishes are in good condition and expected to last another ten or more years with the exception of the door hardware which may need to be upgraded in that timeframe.

Interior Finishes/Systems

Most of the floor finishes are carpet and polished, sealed concrete. These finishes are relatively new and in good condition, but will reach the end of their expected lifecycle in the next ten years and should be replaced or renewed. A welded-seam synthetic floor in the kitchen should outlast the scope of this report. Wall finishes are paint, ceramic tile, Fiberglass Reinforced Plastic (FRP), and wood paneling. The tile, FRP, and wood paneling should last beyond the next ten years. It is recommended that the painted walls be repainted within the next few years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors, including the overhead coiling grilles, and the break room casework are also in good condition with no recommendations at this time.

Accessibility

This building was recently constructed in compliance with current accessibility requirements. The entrances are at grade level and some have powered door openers. The door hardware and signage is compliant with accessibility standards and the restrooms provide the required accessible features. The elevator has an accessible control panel, and the stairs have compliant railings. There are no accessibility recommendations at this time.

Health

The commercial kitchen equipment and fixtures are in good condition and should last beyond the next ten years. Several coolers and freezers support the needs of the kitchen. The equipment appears to be well maintained, in excellent condition, and has substantial remaining service life.

An emergency eyewash station in room 107 is available in the event of a mishap. The unit is new and should continue to serve the facility over the scope of this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number and size of the exits appears adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

There is a potential break in a fire-rated partition at an exposed conduit in Lounge 305. Although only this instance was noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to that which was observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system. The system incorporates smoke detectors and pull stations for activation with audible/visual strobes for notification. The system appears to provide adequate coverage and is in excellent condition. The fire alarm system has substantial remaining service life with no recommendations. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system and additional fire suppression is provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition.

HVAC

A 45-ton Aaon rooftop package unit provides heating (natural gas) and cooling (R410A DX refrigerant). The package unit contains a supply fan, exhaust fan, and a heat wheel. Distribution equipment consists

of metal ductwork believed to be equipped with variable air volume (VAV) boxes and the controls are a digital application. The HVAC equipment is in excellent condition and has substantial remaining service life. However, a partial control upgrade may need to be considered over the scope of this report.

Two rooftop makeup air units (MUA) serve the kitchen. These units utilize natural gas for heating and appear to be well maintained. The facility also has ductless split systems and split systems that either provide cooling only or heating and cooling to select rooms. This new equipment is charged with R410 DX refrigerant and has substantial remaining service life.

Facility exhaust is provided by a rooftop centrifugal fan, several utility set type fans, and a propeller type fan. The fans serve restrooms, mechanical spaces, kitchen hoods, and general exhaust needs. They are in excellent condition with no recommendations. Additionally, there are several overhead hoods in the kitchen. They have wet chemical fire suppression equipment and are in good condition with substantial remaining service life.

Electrical

Power is supplied via underground utilities at 480/277 volts to a 1,200 amp main switchboard in room E1-01. The main electrical equipment appears to be serviceable for the foreseeable future. The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures equipped with acrylic, mesh screen, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and is in good condition. The system has remaining service life beyond the scope of this report.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted fixtures and lighting from the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage with no additional recommendations.

Emergency power is provided by a Genarac diesel-fired generator that provides power at 480/277 volts. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears to be well maintained and in good condition. The generator and transfer switches should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the rooftop package unit supply fan, an exhaust fan, and heat wheel. The VFDs are new and in excellent condition.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers on the water systems prevent cross contamination. Drain piping is cast-iron with no hub connections. The piping systems and backflow preventers are in good condition with no reported issues.

Domestic hot water is provided by two A.O. Smith gas-fired water heaters with heating capacities of 199 MBH each. A large storage tank, expansion tank, and two pumps support the water heaters. The domestic water heating equipment is new and in excellent condition.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of these fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

This three-story facility as a Kone machine-room-less (MRL) passenger elevator. It has a car capacity of 3,500 pounds and is controlled by a proprietary solid state controller. The elevator serves three floors in the facility and the parking garage underneath. The unit appears to be well maintained and was operating properly on the day of inspection.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

September 10, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	11,854	0	$11,854
INTERIOR	0	0	0	0	0	0	0	0	0	0	64,986	0	221,357	0	$286,343
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	0	50,409	0	0	0	$50,409
FIRE/LIFE SAFETY	909	0	0	0	0	0	0	0	0	0	0	0	0	0	$909
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$909	$0	$0	$0	$0	$0	$0	$0	$0	$0	$115,394	$0	$233,211	$0	$349,515
TOTAL NONRECURRING PROJECT NEEDS			$909	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$348,606	

CURRENT REPLACEMENT VALUE	$13,078,000
FACILITY CONDITION NEEDS INDEX	0.03
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
37,606	$349,515	$9.29

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$0	$11,854	$11,854
INTERIOR	$0	$286,343	$286,343
PLUMBING	$0	$0	$0
HVAC	$0	$50,409	$50,409
FIRE/LIFE SAFETY	$909	$0	$909
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$909**	**$348,606**	**$349,515**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2075FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	909
				TOTAL	**$909**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2075	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE			C3020	2024	64,986
2075	BA44	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - STUDENT UNION				D3060	2024	33,237
2075	BA67	HVAC CONTROLS - MAJOR INSTRUMENTATION - STUDENT UNION				D3060	2024	17,172
2075	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2026	4,732
2075	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2026	7,122
2075	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	119,260
2075	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	102,097
							TOTAL	**$348,606**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2075FS01	ELIMINATE FIRE RATING COMPROMISES	1	$909
		TOTAL FOR PLANT ADAPTION		**$909**
		GRAND TOTAL:		**$909**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	2075FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$909
				TOTAL FOR FIRE/LIFE SAFETY	**$909**
				GRAND TOTAL:	**$909**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	2075FS01	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	11/28/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Room Only: Floor(s) 3

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include exposed conduit in Lounge 305. Although only this instance was noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to that which was observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	LOT	1	$150	$150	$500	$500	$650
Base Material/Labor Costs				**$150**		**$500**	
Indexed Material/Labor Costs				**$149**		**$504**	**$653**
Construction Mark Up at 20.0%							**$131**
Original Construction Cost							**$784**
Date of Original Estimate: 11/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$784**
Professional Fees at 16.0%							**$125**
TOTAL PROJECT COST							**$909**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW07	WALL, EXTERIOR, SIDING, WOOD BOARD, PREMIUM				3,970	SF	1.12	$70,270	2014	40		2054
WN05	GLASS, STOREFRONT				4,410	SF	1.12	$622,629	2014	40		2054
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				6	LEAF	1.00	$18,133	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				5	LEAF	1.00	$10,033	2014	40		2054
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				120	SF	1.00	$12,503	2014	30		2044
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			5	EA	1.00	$33,852	2014	20		2034
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			1	EA	1.00	$6,770	2014	20		2034
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				1	EA	1.00	$2,095	2014	30		2044
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				5	EA	1.00	$4,732	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR				6	EA	1.00	$7,122	2014	12		2026
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				14,799	SF	1.00	$258,103	2014	20		2034
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				63	LEAF	1.00	$139,321	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			12	LEAF	1.00	$44,022	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			10	LEAF	1.00	$36,685	2014	60		2074
DR03	DOOR - OVERHEAD, INTERIOR	FOLDING WALL			600	SF	1.00	$62,514	2014	45		2059

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR03	DOOR - OVERHEAD, INTERIOR	OVERHEAD COILING GRILLE			80	SF	1.00	$8,335	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	SIDE FIRE CURTAIN			50	SF	1.00	$5,210	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	SIDE FIRE CURTAIN			60	SF	1.00	$6,251	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	OVERHEAD COILING STEEL			30	SF	1.00	$3,126	2014	45		2059
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			63	EA	1.00	$47,433	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			12	EA	1.00	$9,035	2014	35		2049
DR26	DOOR PANIC HARDWARE, INTERIOR				10	EA	1.00	$11,870	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RMS	65	LF	1.00	$36,457	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				42,730	SF	1.00	$119,260	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,420	SF	1.00	$57,512	2014	60		2074
IW07	WALL FINISH - WOOD PANEL, PREMIUM				950	SF	1.00	$42,623	2014	80		2094
IW09	WALL FINISH - WALL COVERING, ROLL	FRP			2,370	SF	1.00	$13,513	2014	20		2034
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				8,570	SF	1.00	$102,097	2014	12		2026
IF04	FLOORING - VINYL SHEET, STANDARD			KITCHEN	1,430	SF	1.00	$16,120	2014	15		2029
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE			18,580	SF	1.00	$64,986	2014	10		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				23,720	SF	1.00	$264,008	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				4,290	SF	1.00	$11,973	2014	24		2038
IC06	CEILING FINISH - METAL OR SPECIALTY TILE	WOOD			570	SF	1.00	$28,764	2014	70		2084
VT01	ELEVATOR MODERNIZATION - TRACTION - LOW RISE 2-8 FLOORS	KONE		M1-01, ELEV MR	1	EA	1.00	$368,695	2014	25		2039
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				3	EA	1.00	$8,082	2014	25		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				15	EA	1.00	$20,267	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN				6	EA	1.00	$4,635	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				5	EA	1.00	$8,322	2014	50		2064
FX10	PLUMBING FIXTURE - URINAL				3	EA	1.00	$3,236	2014	35		2049
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				14	EA	1.00	$23,730	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			107	1	EA	1.00	$1,080	2014	35		2049
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J3-01	1	EA	1.25	$1,258	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J3-01	1	EA	0.50	$503	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J2-01	1	EA	0.50	$503	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J1-01	1	EA	0.50	$503	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J1-02	1	EA	0.50	$503	2014	20		2034
BF02	BACKFLOW PREVENTER (1-2 INCHES)	WATTS	0000009457	M1-01	1	EA	1.25	$2,793	2014	20		2034
PS21	SUPPLY PIPING SYSTEM - STUDENT UNION				37,606	SF	1.00	$424,498	2014	50		2064
TK04	WATER TANK (275-1,649 GAL)	T-1	0000005197	0000005197	300	GAL	1.00	$15,696	2014	30		2044
TK07	EXPANSION TANK, STL PT (20-26 GAL)	ET-1	0000009456	M1-01	25	GAL	1.00	$1,713	2014	30		2044
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)		0000005195	M1-01	199	MBH	1.00	$16,468	2014	25		2039
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)		0000005196	M1-01	199	MBH	1.00	$16,468	2014	25		2039
PD21	DRAIN PIPING SYSTEM - STUDENT UNION				37,606	SF	1.00	$636,286	2014	60		2074
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI ELECTRIC	0000005183	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI ELECTRIC	0000005184	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI ELECTRIC	0000005185	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI ELECTRIC	0000005188	IDF-2	3	TON	1.00	$5,611	2014	30		2044
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI ELECTRIC	0000005226	IDF-1	3	TON	1.00	$5,611	2014	30		2044
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI ELECTRIC	0000005227	BDF	3	TON	1.00	$5,611	2014	30		2044
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005177	ROOF	6	TON	1.00	$19,380	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005178	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005179	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005180	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005181	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005182	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005180	ROOF	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005181	ROOF	10	TON	1.00	$32,301	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DAIKIN	0000005182	ROOF	8	TON	1.00	$25,840	2014	20		2034
AH26	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (208-263 MBH INPUT)	MAU-1	0000005174	ROOF	250	MBH	1.00	$17,407	2014	25		2039
AH26	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (208-263 MBH INPUT)	MAU-2	0000005175	ROOF	250	MBH	1.00	$17,407	2014	25		2039
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-SC-1	0000005186	ROOF	1	EA	1.00	$6,899	2014	25		2039
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ELEV MR		M1-01	1	HP	0.50	$1,363	2014	20		2034
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	F-SU-4	0000005169	ROOF	1	HP	1.00	$5,466	2014	40		2054
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	F-SU-6	0000005170	ROOF	1	HP	1.00	$5,466	2014	40		2054
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	F-SU-7	0000005171	ROOF	1	HP	1.00	$5,466	2014	40		2054

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	F-SU-5	0000005172	ROOF	1	HP	1.00	$5,466	2014	40		2054
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	F-SU-3	0000005173	ROOF	3	HP	1.00	$12,110	2014	40		2054
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	GAYLORD	0000005663	103	14	LF	1.00	$14,720	2014	30		2044
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	GAYLORD	0000005661	103	8	LF	1.00	$8,412	2014	30		2044
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	GAYLORD	0000005662	103	5	LF	1.00	$5,257	2014	30		2044
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	GAYLORD	0000005658	107	12	LF	1.00	$12,617	2014	30		2044
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	GAYLORD	0000005657	107	12	LF	1.00	$12,617	2014	30		2044
HV21	HVAC DISTRIBUTION NETWORKS - STUDENT UNION				37,606	SF	1.00	$1,255,907	2014	45		2059
PH01	PUMP - ELECTRIC (<=10 HP)	CP-2	0000009459	M1-01	1	HP	1.00	$1,693	2014	30		2044
PH01	PUMP - ELECTRIC (<=10 HP)	CP-3	0000009460	M1-01	1	HP	1.00	$1,693	2014	30		2044
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	DOAS-SU-1-1	0000005187	ROOF	45	TON	1.00	$298,939	2014	25		2039
BA21	HVAC CONTROLS - TERMINAL ASSEMBLIES - STUDENT UNION				37,606	SF	1.00	$118,532	2014	20		2034
BA44	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - STUDENT UNION				37,606	SF	1.00	$33,237	2014	10		2024
BA67	HVAC CONTROLS - MAJOR INSTRUMENTATION - STUDENT UNION				37,606	SF	1.00	$17,172	2014	10		2024
FS01	FIRE SPRINKLER SYSTEM - WET				37,606	SF	1.00	$508,758	2014	80		2094

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA01	FIRE ALARM SYSTEM - DEVICES				37,606	SF	1.00	$161,632	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT			1	EA	1.00	$13,857	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2014	18		2032
SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION				37,606	SF	1.00	$880,053	2014	50		2064
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	SWBD-SC-1	0000005203	E1-01	1,200	AMP	1.00	$89,981	2014	40		2054
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EXT AHU HEAT WH		ROOF, AHU	1	HP	1.00	$727	2014	15		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	EXT AHU RET FAN		ROOF, AHU	7	HP	1.00	$4,632	2014	15		2029
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	EXT AHU SUP FAN		ROOF, AHU	15	HP	1.00	$6,433	2014	16		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			45	EA	1.00	$22,885	2014	20		2034
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			9	EA	1.00	$6,944	2014	20		2034
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)	SITE		SITE	1	EA	1.00	$4,402	2014	40		2054
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)	SITE		SITE	2	EA	1.00	$3,895	2014	40		2054
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM	SITE		SITE	3	EA	1.00	$3,754	2014	20		2034
LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION				37,606	SF	1.00	$444,306	2014	20		2034
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				18,803	SF	1.00	$43,182	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN04	GENERATOR - DIESEL (200-500 KW)	GENERAC	0000004660	SITE	300	KW	1.00	$139,430	2014	25		2039
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	ATS-SU-EH1	0000005212	E1-01	60	AMP	1.00	$5,220	2014	25		2039
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-SU-SH1	0000005211	E1-01	100	AMP	1.00	$5,527	2014	25		2039
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE			108	80	SF	1.00	$27,656	2014	35		2049
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE			108	80	SF	1.00	$27,656	2014	35		2049
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE			108	80	SF	1.00	$27,656	2014	35		2049
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	IMPERIAL BROWN		112	80	SF	1.00	$27,656	2014	35		2049
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	IMPERIAL BROWN		112	80	SF	1.00	$27,656	2014	35		2049
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER			108	1	EA	1.00	$9,776	2014	15		2029
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER			108	1	EA	1.00	$9,776	2014	15		2029
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER			108	1	EA	1.00	$9,776	2014	15		2029
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	IMPERIAL BROWN		112	1	EA	1.00	$9,776	2014	15		2029
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	IMPERIAL BROWN		112	1	EA	1.00	$9,776	2014	15		2029
CK01	COMMERCIAL KITCHEN EQUIPMENT ESTIMATE BY SQUARE FOOT				4,595	SF	0.20	$812,988	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
							Grand Total:	$9,239,453				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2075 for DR

No Projected Component Replacement Cost for Asset No. 2075 for 2018

No Projected Component Replacement Cost for Asset No. 2075 for 2019

No Projected Component Replacement Cost for Asset No. 2075 for 2020

No Projected Component Replacement Cost for Asset No. 2075 for 2021

No Projected Component Replacement Cost for Asset No. 2075 for 2022

No Projected Component Replacement Cost for Asset No. 2075 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE	18,580	SF	$77,596	2024

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - STUDENT UNION		37,606	SF	$20,504	2024
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - STUDENT UNION		37,606	SF	$39,686	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$137,787**	

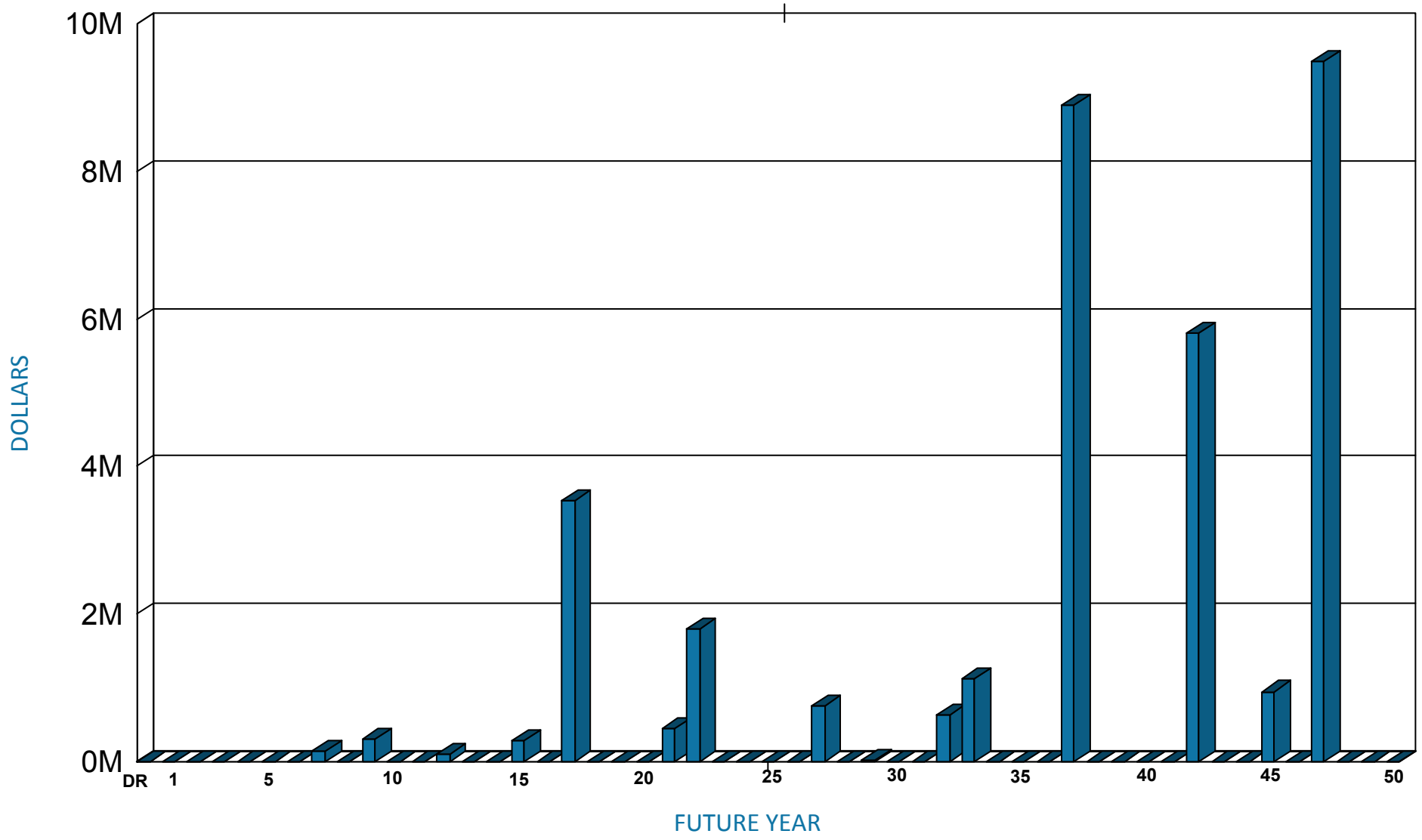
No Projected Component Replacement Cost for Asset No. 2075 for 2025

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		8,570	SF	$129,334	2026
C3010	WALL FINISH - APPLIED, STANDARD		42,730	SF	$151,075	2026
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		5	EA	$5,995	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		6	EA	$9,022	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$295,425**	

No Projected Component Replacement Cost for Asset No. 2075 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



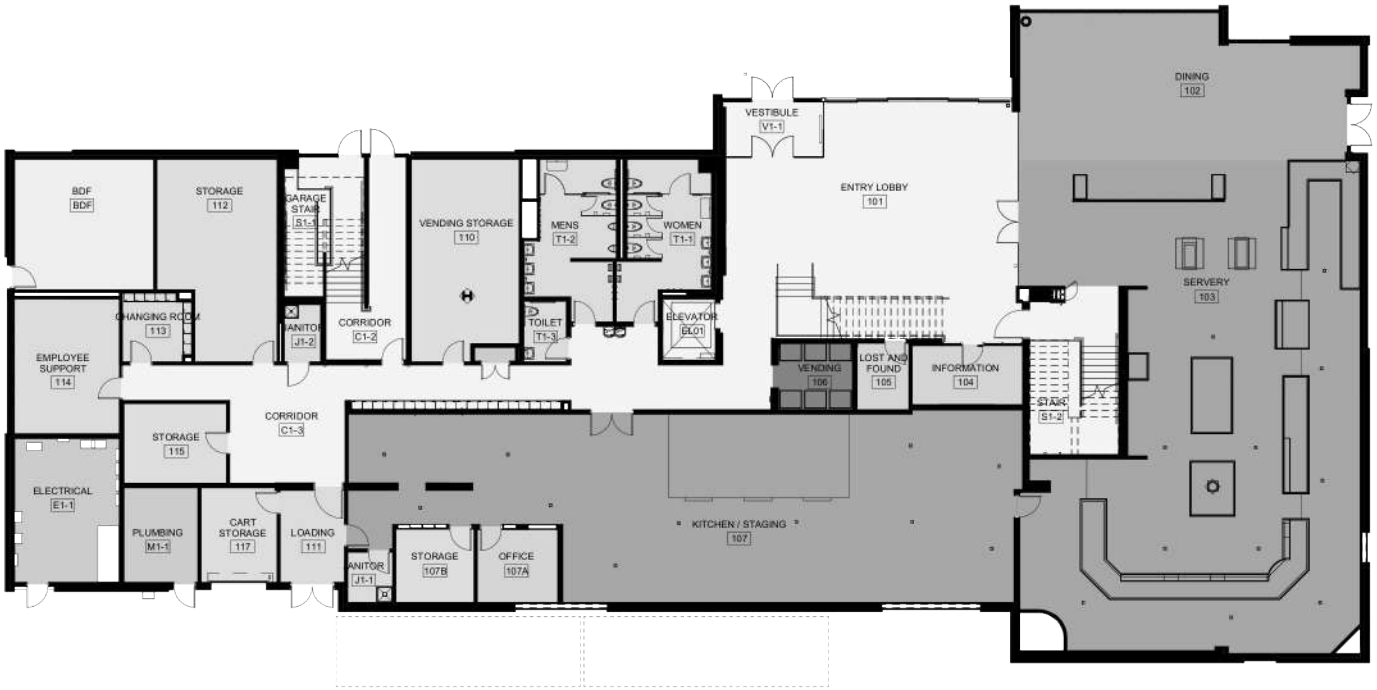
Average Annual Renewal Cost per SF $6.38

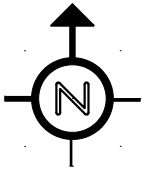
FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE





STUDENT UNION

BLDG NO. 2075

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE

STUDENT UNION

BLDG NO. 2075

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

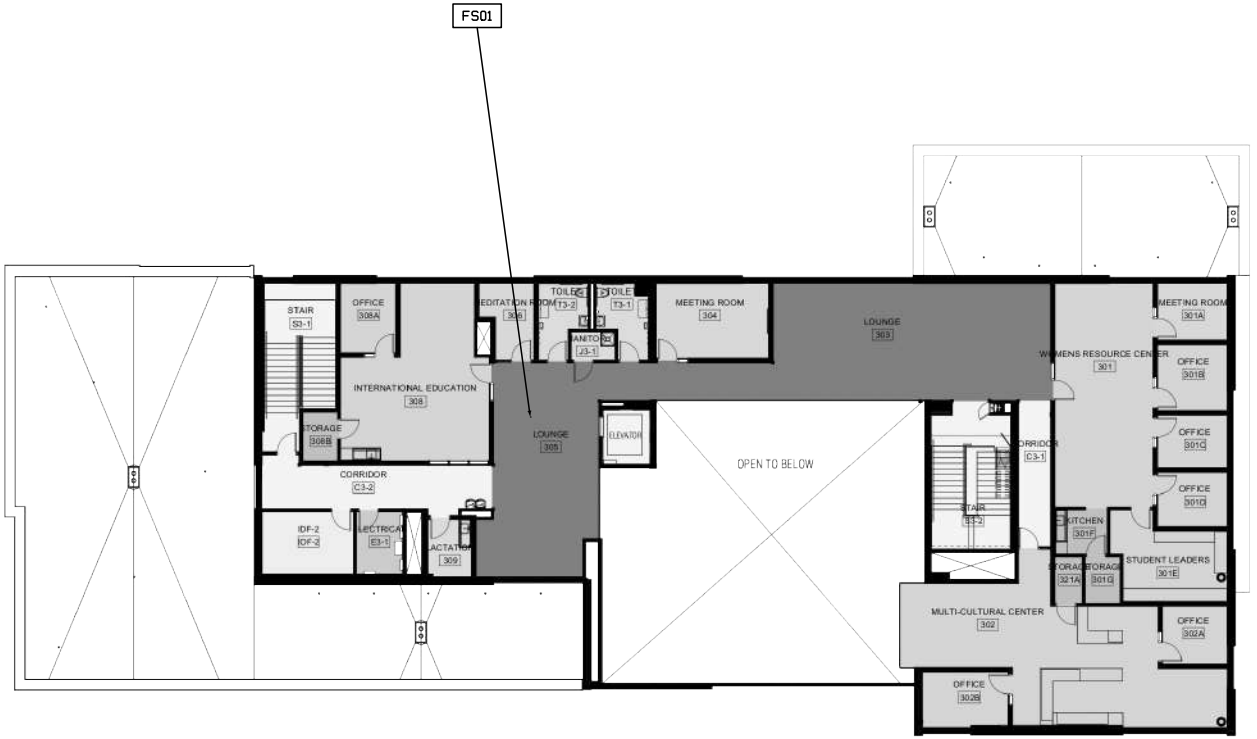
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE



STUDENT UNION

BLDG NO. 2075

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date:	12/20/2018
Drawn by:	A.W.
Project No.	18-064

THIRD FLOOR PLAN

Sheet No.

3 of 3

SECTION 6

PHOTOGRAPHS

2075001a 9/10/2018

Exterior finishes at the main entrance

North elevation

2075001e 9/10/2018

Car operating panel0

Elevator cab

2075002a 9/10/2018

Exterior finishes and site conditions

North elevation

2075002e 9/10/2018

Exhaust fan

Roof

2075003a 9/10/2018

Exterior finishes and site conditions

North elevation

2075003e 9/10/2018

Condensing units

Roof

2075004a 9/10/2018

Exterior finishes and site conditions

East elevation

2075004e 9/10/2018

Condensing units

Roof

2075005a 9/10/2018

Detail at the glazing system

North elevation

2075005e 9/10/2018

Condensing units

Roof

2075006a 9/10/2018

Detail at the glazing system

North elevation

2075006e 9/10/2018

Exterior air handling unit

Roof

2075007a 9/10/2018

Dining area entrance

East elevation

2075007e 9/10/2018

VFDs

Roof, interior of AHU

2075008a 9/10/2018

Exterior finishes and site conditions

West elevation

2075008e 9/10/2018

Exhaust fan

Roof, interior of AHU

2075009a 9/10/2018

Exterior finishes

South elevation

2075009e 9/10/2018

Pump equipment

Roof, interior of AHU

2075010a 9/10/2018

Exterior finishes

South elevation

2075010e 9/10/2018

Interior lighting

Roof, interior of AHU

2075011a 9/10/2018

Entrance lobby doors and hardware

Lobby 101

2075011e 9/10/2018

Fan section

Roof, interior of AHU

2075012a 9/10/2018

Stair with compliant handrails

Stair S1-2

2075012e 9/10/2018

Filter section

Roof, interior of AHU

2075013a 9/10/2018

Dining area finishes

Room 102

2075013e 9/10/2018

Makeup air unit

Roof

2075014a 9/10/2018

Security grille at the stair

Stair S1-2

2075014e 9/10/2018

Exhaust fan

Roof

2075015a 9/10/2018

Servery area casework and finishes

Room 102

2075015e 9/10/2018

Exhaust fan

Roof

2075016a 9/10/2018

Servery area casework and finishes

Room 102

2075016e 9/10/2018

Evaporator and interior lighting

Third floor, room 301A

2075017a 9/10/2018

Servery area casework and finishes

Room 102

2075017e 9/10/2018

Occupancy sensor

Third floor, room 301A

2075018a 9/10/2018

Servery area wood ceiling

Room 102

2075018e 9/10/2018

Interior lighting

Third floor, room 301G

2075019a 9/10/2018

Kitchen area floor

Room 102

2075019e 9/10/2018

Strobe and occupancy sensor

Third floor, room 301E

2075020a 9/10/2018

Kitchen area equipment and finishes

Room 107

2075020e 9/10/2018

Interior lighting

Third floor, room 302

2075021a 9/10/2018

Utility sink

Room J1-1

2075021e 9/10/2018

Service sink

Third floor, room J3-1

2075022a 9/10/2018

Lavatories and area finishes

Room T1-2

2075022e 9/10/2018

Backflow preventer

Third floor, room J3-1

2075023a 9/10/2018

Accessible water closet and accessories

Room T1-2

2075023e 9/10/2018

Evaporator

Third floor, room E3-1

2075024a 9/10/2018

Urinals, screens, and toilet partitions

Room T1-2

2075024e 9/10/2018

Transformer and panelboards

Third floor, room E3-1

2075025a 9/10/2018

Lavatories and area finishes

Room T1-1

2075025e 9/10/2018

Evaporator

Third floor, room IDF3-1

2075026a 9/10/2018

Accessible water closet and accessories

Room T1-1

2075026e 9/10/2018

Smoke detector and interior lighting

Third floor, room IDF3-1

2075027a 9/10/2018

Accessible drinking fountains

Corridor C1-3

2075027e 9/10/2018

Digital thermostat

Third floor, room IDF3-1

2075028a 9/10/2018

Typical corridor finishes

Corridor C1-3

2075028e 9/10/2018

Fire extinguisher

Third floor, corridor

2075029a 9/10/2018

Stair in the main lobby

Lobby 101

2075029e 9/10/2018

Interior lighting

Second floor, room 211

2075030a 9/10/2018

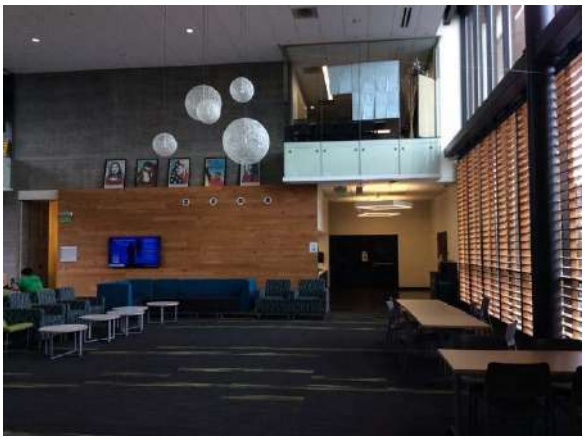
Overhead door at service counter

Room 207A

2075030e 9/10/2018

Transformers and panelboards

Second floor, room E2-1



2075031a 9/10/2018

Interior finishes

Room 206

2075031e 9/10/2018

Kitchen hood

First floor, room 103

2075032a 9/10/2018

Break area in the student lounge

Room 206

2075032e 9/10/2018

Kitchen hood

First floor, room 103

2075033a 9/10/2018

Meeting rooms with folding wall

Room 203/204

2075033e 9/10/2018

Coolers

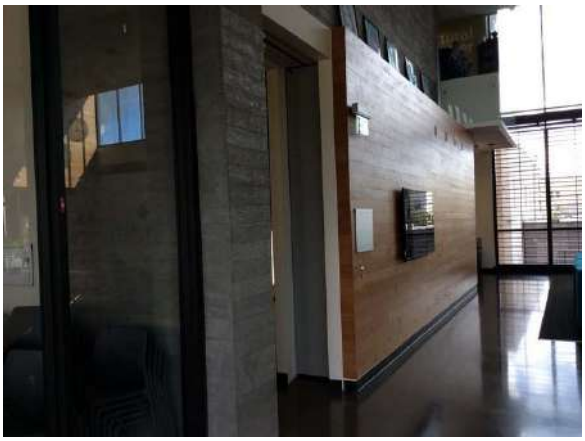
First floor, room 107

2075034a 9/10/2018
Meeting rooms with folding wall
Room 203/204

2075034e 9/10/2018
Kitchen hood
First floor, room 107

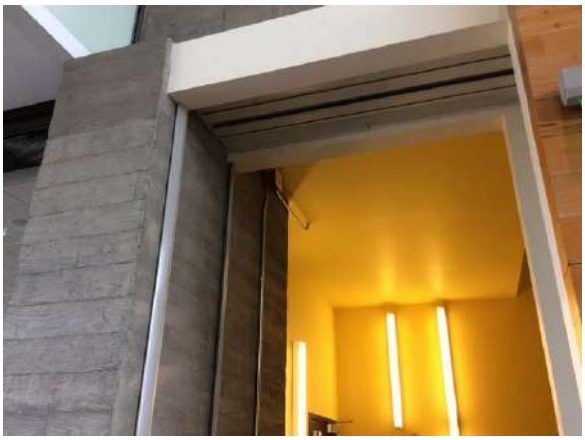
2075035a 9/10/2018
Upper dining room finishes and folding wall
Room 202

2075035e 9/10/2018
Interior lighting
First floor, room 107



2075036a 9/10/2018
Upper lobby finishes
Corridor C2-1

2075036e 9/10/2018
Elevator controller
First floor, room M1-1



2075037a 9/10/2018

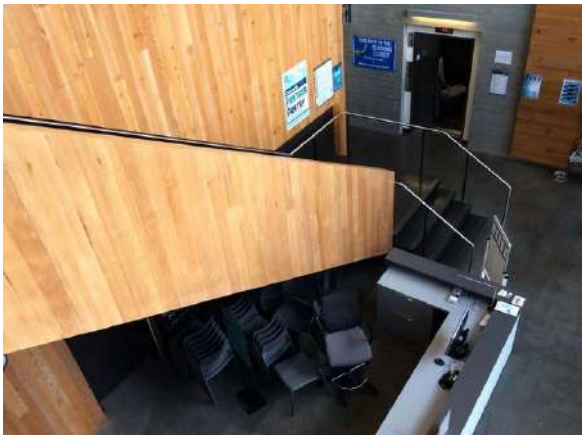
Fire door track

Stair S2-2

2075037e 9/10/2018

Exhaust fan

First floor, room M1-1



2075038a 9/10/2018

Stair at the main lobby

Corridor C2-1

2075038e 9/10/2018

Coolers

First floor, room 112

2075039a 9/10/2018

Roof membrane and fall protection tie-off points

Roof

2075039e 9/10/2018

Annunciator

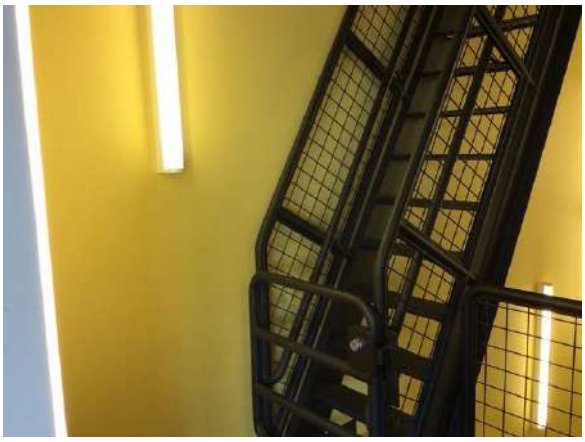
First floor, room V1-1

2075040a 9/10/2018
Roof-mounted equipment and roof drains
Roof

2075040e 9/10/2018
Exterior lighting
Building exterior

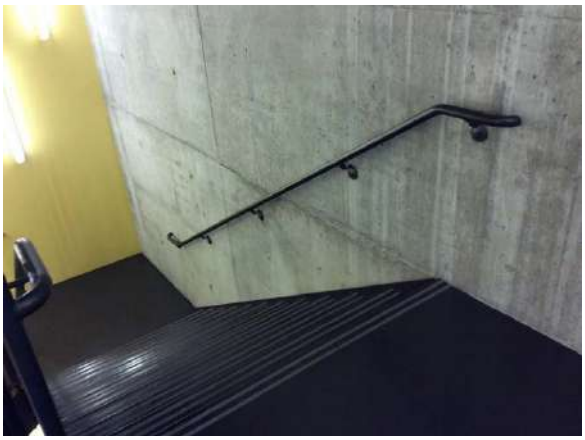
2075041a 9/10/2018
Roof access hatch and flashing
Roof

2075041e 9/10/2018
Exterior lighting
Site



2075042a 9/10/2018
Roof access ladder
Stair S3-2

2075042e 9/10/2018
Exterior lighting
North elevation



2075043a 9/10/2018

Stair with compliant handrails

Stair S3-2

2075043e 9/10/2018

Exterior lighting

North elevation

2075044a 9/10/2018

Break room casework with accessible sink

Room 301F

2075044e 9/10/2018

Exterior lighting

East elevation

2075045a 9/10/2018

Break room casework with accessible sink

Room 301F

2075045e 9/10/2018

Exhaust fan

South elevation

2075046a 9/10/2018

Typical office area finishes

Room 302

2075046e 9/10/2018

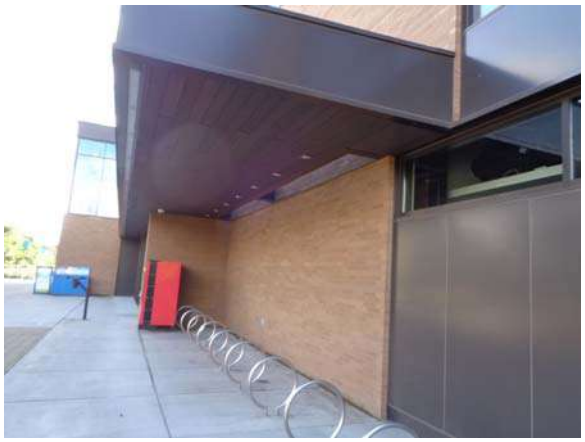
Exterior lighting

North elevation

2075047a 9/10/2018

Fire door track

Stair S3-2



2075047e 9/10/2018

Exterior lighting

North elevation

2075048a 9/10/2018

View of student lounge from the floor above

Lounge 303

2075048e 9/10/2018

Switchboard

First floor, room E1-1

2075049a 9/10/2018

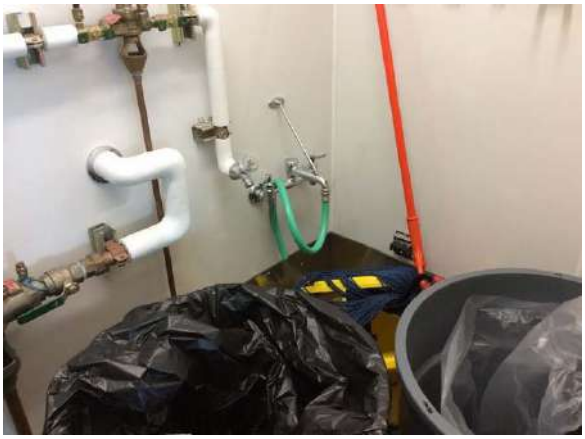
Unfirestopped penetrations

Lounge 305

2075049e 9/10/2018

Transformer

First floor, room E1-1



2075050a 9/10/2018

Utility sink

Room J3-1

2075050e 9/10/2018

Automatic transfer switches and panelboards

First floor, room E1-1

2075051a 9/10/2018

Accessible restroom lavatory and accessories

Room T3-2

2075051e 9/10/2018

Interior lighting

First floor, room E1-1

2075052a 9/10/2018
Accessible restroom water closet and accessories
Room T3-2

2075052e 9/10/2018
Evaporators
First floor, room E1-1

2075053a 9/10/2018
Typical room doors with compliant signage and hardware
Lounge 305

2075053e 9/10/2018
Backflow preventer
First floor, room M1-1

2075054a 9/10/2018
Accessible drinking fountains
Corridor 3-2

2075054e 9/10/2018
Expansion tank
First floor, room M1-1

2075055a 9/10/2018

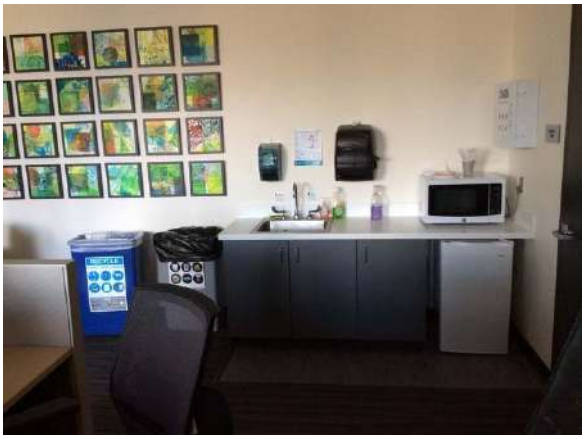
Accessible casework and sink

Room 309

2075055e 9/10/2018

Pump equipment

First floor, room M1-1



2075056a 9/10/2018

Accessible casework and sink

Room 308

2075056e 9/10/2018

Water heaters

First floor, room M1-1

2075057a 9/10/2018

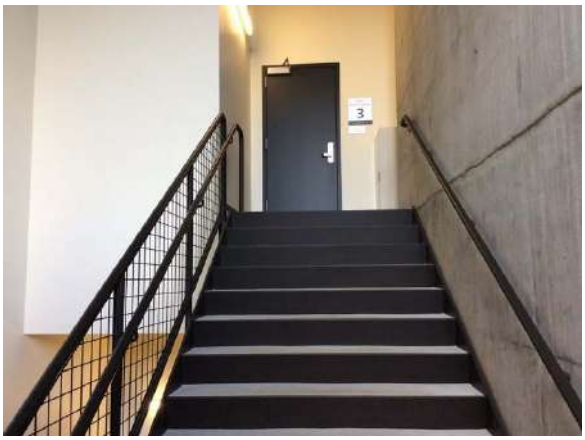
Stairwell door and hardware

Stair S3-1

2075057e 9/10/2018

Pull station

First floor, room M1-1



2075058a 9/10/2018

Stair with compliant handrails

Stair S3-1

2075058e 9/10/2018

Generator

Site

2075059a 9/10/2018

Stair with compliant handrails

Stair S3-1

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2075
Asset Name	Student Union
Year Built or Last Energy Renovation	2014

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

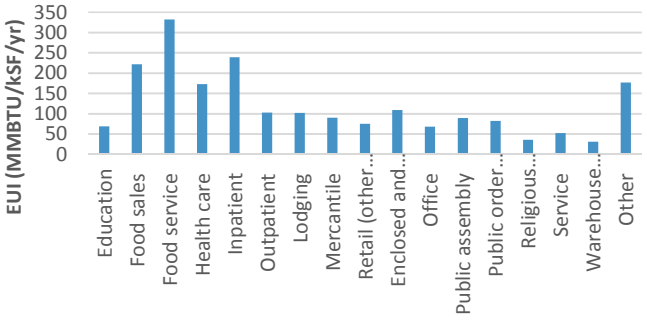
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Student Union
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

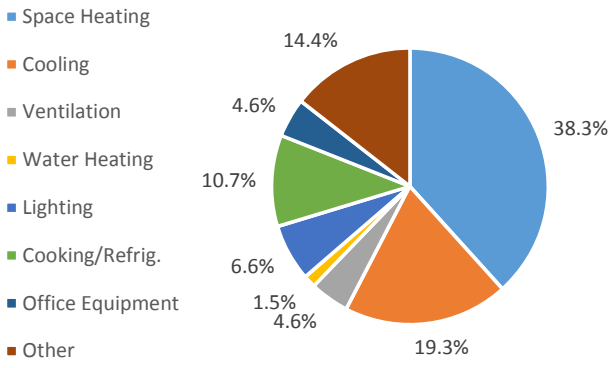


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: STUDENT UNION	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Student Union



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	There are no ECM recommendations for this building	

PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Technology Education Building
Asset 2080

Inspected September 11, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

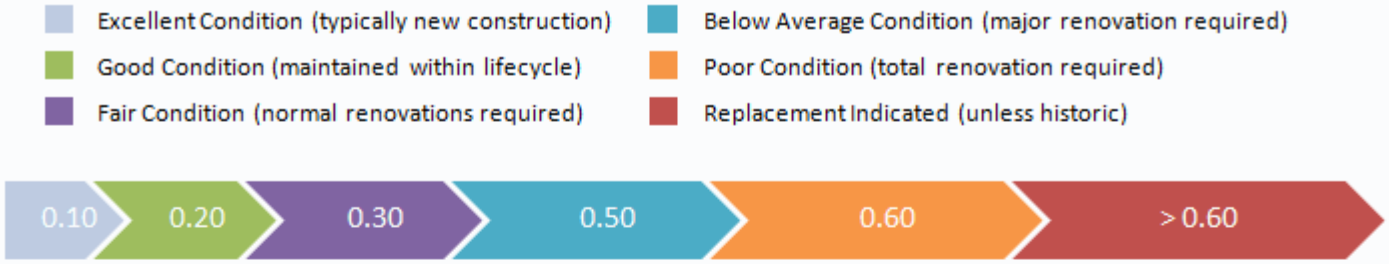
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

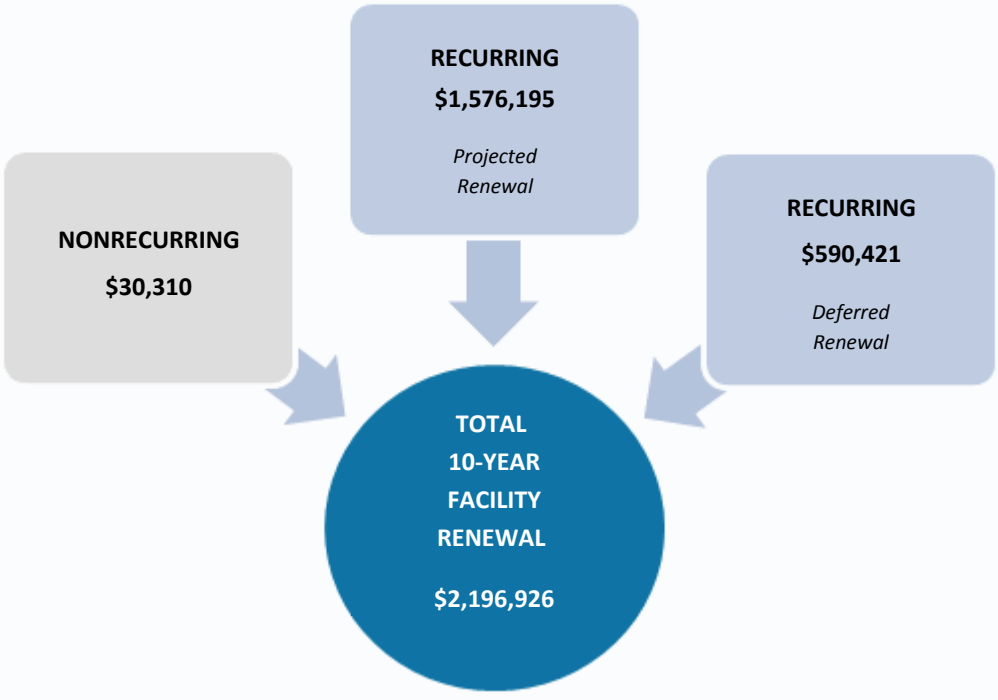
ASSET CODE	2080		
ASSET NAME	TECHNOLOGY EDUCATION BUILDING	**CURRENT REPLACEMENT VALUE**	$20,481,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.11
YEAR BUILT	2004	**FACILITY CONDITION INDEX**	0.03
GSF	50,500	**10-YEAR $/SF**	43.50
INSPECTION DATE	09/11/2018		

FCNI Scale

The FCNI for this asset is **0.11**



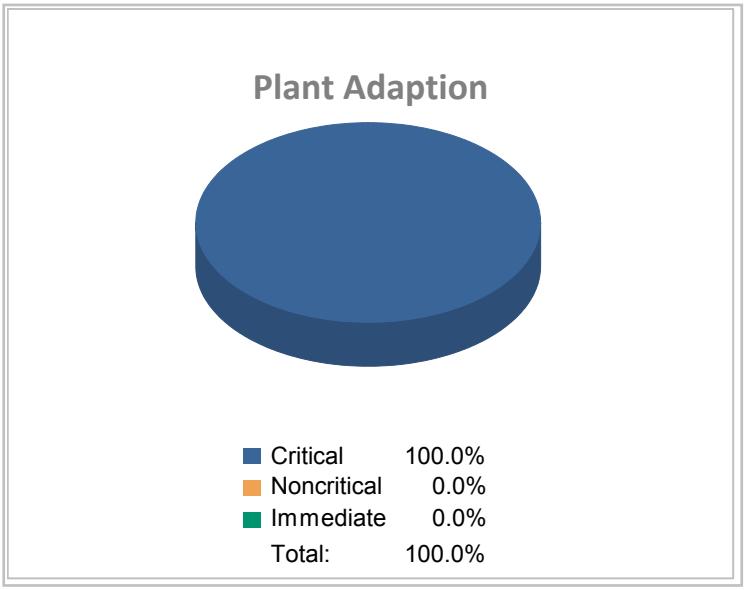
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

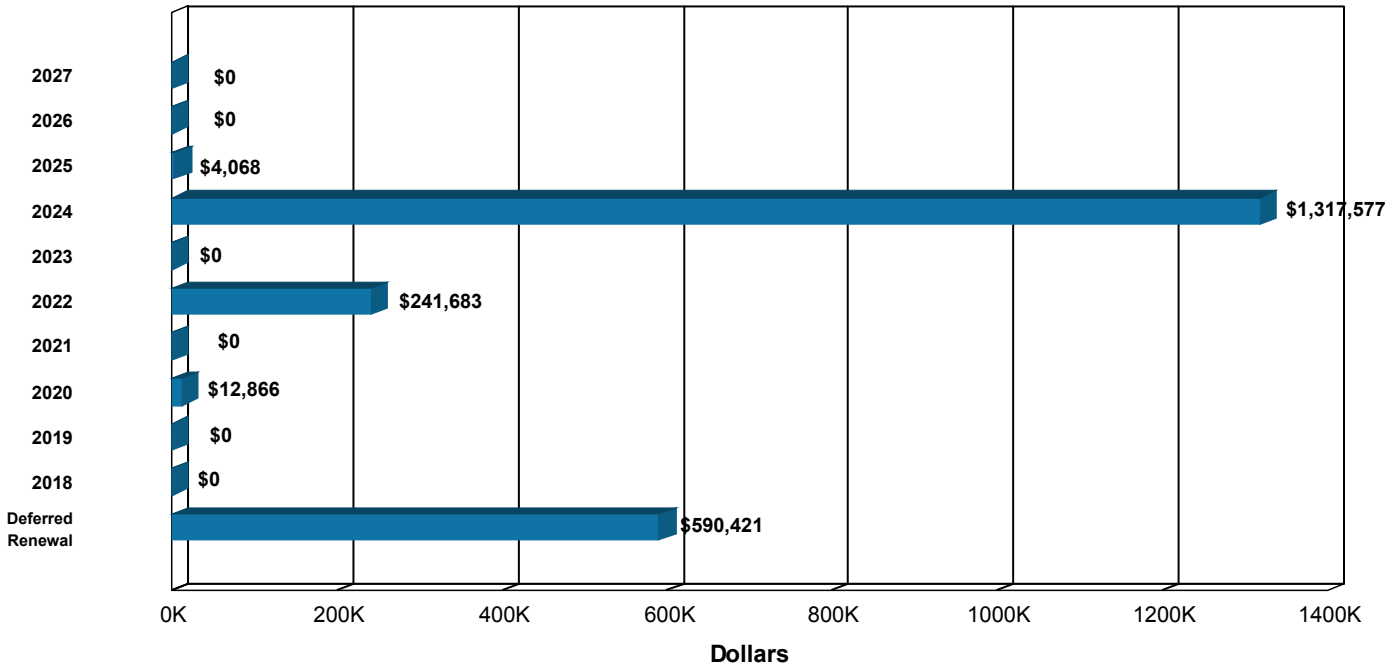
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$30,310**
3 - Noncritical	**$0**



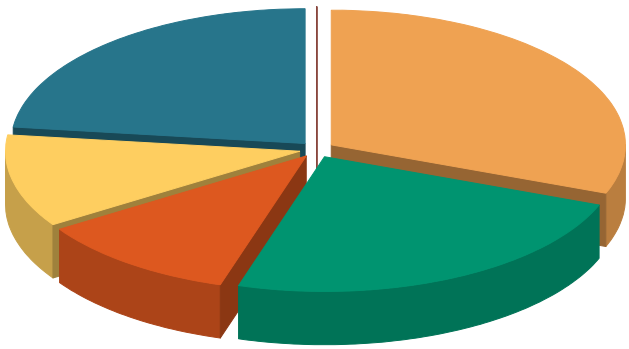
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$676,665	31%
Exterior	$523,613	24%
Fire/Life Safety	$247,360	11%
Health	$0	0%
HVAC	$243,986	11%
Interiors	$503,289	23%
Plumbing	$2,012	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$2,196,926**	

ASSET SUMMARY

The Technology Education Building is a 50,500 square-foot building on the Portland Community College, Cascade campus. Built in 2004, this two-story building includes a video production studio, classrooms, and faculty offices. The building has a flat roof and exterior walls of brick, concrete, and metal siding.

Information for this report was gathered during a site visit conducted on September 11, 2018.

Site

The Technology Education Building is on the northeast corner of North Killingsworth Street and North Kerby Avenue on the Cascade campus of the Portland Community College. The site is flat and is bordered on the south, east and west sides by concrete pedestrian city sidewalks and the north by campus sidewalks. Parking is provided in nearby campus parking lots. A small service and utility court on the north side of the building is screened by a steel slat privacy wall that is in good condition. Landscaping includes lawn areas, ornamental planting and mature trees, all in good condition.

Exterior Structure

The main roof is an asphaltic membrane that is in good condition, but which will reach the end of its expected lifecycle in the next ten years and should be replaced. Three smaller roofs above portions of the first floor are stone-ballasted, multi-ply systems which should last another ten years. The exterior walls are a combination of brick veneer, cast concrete systems, and metal panel siding. These materials are in good condition and should outlast the scope of this report. The main roof has fiberglass panel skylights which are recommended for replacement in the next ten years. The windows are storefront systems and the exterior doors include flush hollow metal, aluminum and glass storefront, and overhead rolling metal. All of these exterior finishes are expected to last another ten or more years. However, the associated door hardware should be considered for replacement in the near future.

Interior Finishes/Systems

Floor finishes include carpet and polished, sealed concrete. These finishes are relatively new and in good condition. However, they will reach the end of their expected lifecycle in the next ten years and should be replaced or renewed. Wall finishes are paint and wood paneling. The wood paneling should last beyond the next ten years, but it is recommended that the painted walls be repainted within the next few years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors and the casework in the break areas and reception are also in good condition and no work is recommended.

Accessibility

This building was constructed fairly recently in compliance with the accessibility requirements at that time. The entrances are at grade level and some have powered door openers. The door hardware and signage is compliant with accessibility standards and the restrooms provide the required accessible features. The elevator has an accessible control panel, and the stairs have compliant railings. There are no accessibility recommendations at this time.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building provides most fire and life safety features such as adequate exit corridors that are properly marked with exit signs, fire-rated corridor doors, and well located stairs that provide exits from the second floor. However, the egress pathways in suite 125 are not properly designated by exit signs. Although only this instance was cited, a review of exit signage is recommended and new LED battery back-up exit signs should be installed where required. Emergency lighting is provided by select overhead light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment. Although a few tie-offs are installed, it is generally recommended that they be placed near the roof edge and spaced approximately twenty feet apart.

The facility has a modern, Silent Knight fire alarm system with the main panel in room 112. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been partially upgraded with a newer panel. However, the devices are believed to be original and will reach the end of their service life within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. An air compressor provides pressurization of the sprinkler system. The system appears to provide adequate coverage and is in good condition.

HVAC

Two McQuay rooftop package units (RTU) provide heating and cooling. The RTUs have DX refrigerant for cooling and natural gas for heating. Distribution equipment consists of metal ductwork that is believed to contain variable air volume (VAV) boxes. Controls are a Honeywell digital application. The HVAC

equipment is in excellent condition and has remaining service life. However, the controls will reach lifecycle depletion within the scope of this report and should be considered for replacement. Cooling is also provided by three split systems in select rooms. These units are charged with DX refrigerant and in good condition. They have substantial remaining service life with no recommendations. Facility exhaust is provided by a rooftop centrifugal fan which serves restrooms and general exhaust needs. The fan dates to 2004 and appears to be in adequate condition. Based on age, it has remaining service life beyond the next ten years.

Electrical

Power is supplied via underground utilities at 480/277 volts to a 2,500 amp main switchboard in room E1-01. Dry-type transformers are energized and step power down to 120/208 volts. The lower voltage power is distributed through two additional switchboards. The main electrical equipment is serviceable for the foreseeable future with no recommendations. The electrical distribution system consists of panelboards that distribute power 480/277 or 120/208 volts. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased. The system has substantial remaining service life.

The interior lighting consists of suspended light fixtures equipped with acrylic, parabolic, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures lamped with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. However, the system will reach the end of its service life within the next ten years.

The exterior lighting consists of wall-mounted HID fixtures and eave-mounted recessed fixtures. Additional lighting is provided by pole-mounted fixtures and the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. It is in good condition but some may need to be considered for replacement over the scope of this report.

Emergency power is provided by a Cummins diesel-fired generator that provides power at 480/277 volts. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears to be well maintained and in good condition. They should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The VFDs have service to the supply fans and return fans. They are believed to be original and in adequate condition. However, the VFDs will reach the end of their recommended service life within the scope of this report.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers on the water systems prevent cross contamination. Drain piping is cast-iron with no hub connections and some plastic

applications. The piping systems and the backflow preventers are in good condition with no reported issues. However, over the next ten years the backflow preventers will reach the end of their service life.

Domestic hot water is produced by an A.O. Smith, commercial-grade gas-fired water heater that has a tank capacity of 75 gallons. An expansion tank and small pump are utilized by the unit. The domestic water heating equipment is in excellent condition with no recommendations.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of these fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The two-story facility has an Otis hydraulic passenger elevator with a car capacity of 5,000 pounds and controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection. There are no recommendations at this time.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

September 11, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$FCNI = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$FCI = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	0	0	14,228	0	0	0	0	0	0	509,384	0	0	0	$523,613
INTERIOR	0	0	0	503,289	0	0	0	0	0	0	0	0	0	0	$503,289
PLUMBING	0	0	0	0	0	0	0	0	0	0	2,012	0	0	0	$2,012
HVAC	0	0	0	72,904	0	0	0	0	0	0	171,083	0	0	0	$243,986
FIRE/LIFE SAFETY	0	30,310	0	0	0	0	0	0	217,051	0	0	0	0	0	$247,360
ELECTRICAL	0	0	0	0	0	0	12,866	0	24,633	0	635,097	4,068	0	0	$676,665
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$30,310	$0	$590,421	$0	$0	$12,866	$0	$241,683	$0	$1,317,577	$4,068	$0	$0	$2,196,926
TOTAL NONRECURRING PROJECT NEEDS			$30,310	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,166,616	

CURRENT REPLACEMENT VALUE	$20,481,000
FACILITY CONDITION NEEDS INDEX	0.11
FACILITY CONDITION INDEX	0.03

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
50,500	$2,196,926	$43.50

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$0	$523,613	$523,613
INTERIOR	$0	$503,289	$503,289
PLUMBING	$0	$2,012	$2,012
HVAC	$0	$243,986	$243,986
FIRE/LIFE SAFETY	$30,310	$217,051	$247,360
ELECTRICAL	$0	$676,665	$676,665
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$30,310**	**$2,166,616**	**$2,196,926**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2080FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	22,107
2080FS01	IMPROVE EGRESS PATHWAY DESIGNATION	D5090	2	Plant Adaption	8,202
				TOTAL	**$30,310**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2080	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	4,732
2080	DR36	DOOR PANIC HARDWARE, EXTERIOR			125	B2030	Deferred Renewal	1,187
2080	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	8,309
2080	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	196,878
2080	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	Deferred Renewal	256,256
2080	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	50,156
2080	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	Deferred Renewal	47,607
2080	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	Deferred Renewal	25,296
2080	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-1 RET	0000002422	ROOF	D5010	2020	6,433
2080	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-2 RET	0000002429	ROOF	D5010	2020	6,433
2080	FA01	FIRE ALARM SYSTEM - DEVICES			112	D4030	2022	217,051
2080	VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	RAC-1 SUP	0000002421	ROOF	D5010	2022	12,316
2080	VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	RAC-2 SUP	0000002428	ROOF	D5010	2022	12,316
2080	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			B2030	2024	13,541
2080	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			B2030	2024	27,081
2080	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2024	430,783
2080	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				B3020	2024	37,980

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2080	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J2-01	D2020	2024	503
2080	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J2-01	D2020	2024	503
2080	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J1-01	D2020	2024	503
2080	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J1-01	D2020	2024	503
2080	BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				D3060	2024	171,083
2080	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2024	10,011
2080	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	2024	567,098
2080	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2024	57,988
2080	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2025	4,068
							TOTAL	**$2,166,616**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2080FS01	IMPROVE EGRESS PATHWAY DESIGNATION	2	$8,202
2	2080FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$22,107
		TOTAL FOR PLANT ADAPTION		**$30,310**
		GRAND TOTAL:		**$30,310**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	2080FS01	2	Plant Adaption	IMPROVE EGRESS PATHWAY DESIGNATION	$8,202
2	2080FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$22,107
				TOTAL FOR FIRE/LIFE SAFETY	**$30,310**
				GRAND TOTAL:	**$30,310**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

IMPROVE EGRESS PATHWAY DESIGNATION

Project Number:	2080FS01	**Category Code:** FS1A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	11/30/2018	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Not Applicable	Undefined: Floor(s) 1,2
IBC	1011		

Description

The egress pathways in suite 125 are not properly designated by exit signs. Although only this instance was cited, a review of exit signage is recommended. Install new LED battery back-up exit signs where required.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new battery pack LED exit signs, including all connections and extension of power	SF	5,000	$0.78	$3,900	$0.40	$2,000	$5,900
			Base Material/Labor Costs	**$3,900**		**$2,000**	
			Indexed Material/Labor Costs	**$3,877**		**$2,016**	**$5,893**
					Construction Mark Up at 20.0%		**$1,179**
					Original Construction Cost		**$7,071**
Date of Original Estimate: 11/30/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$7,071**
					Professional Fees at 16.0%		**$1,131**
					TOTAL PROJECT COST		**$8,202**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	2080FS02	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/30/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment. Although a few tie-offs are installed, it is generally recommended that they be placed near the roof edge and spaced approximately twenty feet apart.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	20	$304	$6,080	$488	$9,760	$15,840
Base Material/Labor Costs				**$6,080**		**$9,760**	
Indexed Material/Labor Costs				**$6,044**		**$9,838**	**$15,882**
Construction Mark Up at 20.0%							**$3,176**
Original Construction Cost							**$19,058**
Date of Original Estimate: 11/30/2018						**Inflation**	**$0**
Current Year Construction Cost							**$19,058**
Professional Fees at 16.0%							**$3,049**
TOTAL PROJECT COST							**$22,107**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL	LOUVERS ABOVE WINDOWS			330	SF	1.12	$3,843	2004	30		2034
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				2,320	SF	1.12	$54,828	2004	25		2029
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				770	SF	1.12	$1,773	2004	30		2034
WN05	GLASS, STOREFRONT				5,150	SF	1.12	$727,106	2004	40		2044
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				7	LEAF	1.00	$21,156	2004	25		2029
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			125	1	LEAF	1.00	$2,007	2004	40		2044
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	SERVICE			5	LEAF	1.00	$10,033	2004	40		2044
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				144	SF	1.00	$15,003	2004	30		2034
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			4	EA	1.00	$27,081	2004	20		2024
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			2	EA	1.00	$13,541	2004	20		2024
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				1	EA	1.00	$2,095	2004	30		2034
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				5	EA	1.00	$4,732	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				7	EA	1.00	$8,309	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR			125	1	EA	1.00	$1,187	2004	12	1	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				24,700	SF	1.00	$430,783	2004	20		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				1,800	SF	1.00	$37,633	2004	30		2034
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				630	SF	1.00	$37,980	2004	20		2024
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				15	LEAF	1.00	$33,172	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			35	LEAF	1.00	$128,399	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			38	LEAF	1.00	$139,404	2004	60		2064
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			15	EA	1.00	$11,293	2004	35		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			38	EA	1.00	$28,610	2004	35		2039
DR26	DOOR PANIC HARDWARE, INTERIOR				35	EA	1.00	$41,544	2004	30		2034
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			CLSSRMS	456	LF	1.00	$255,762	2004	30		2034
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			RECEPTION	34	LF	1.00	$29,248	2004	40		2044
IW01	WALL FINISH - APPLIED, STANDARD				70,540	SF	1.00	$196,878	2004	12	1	DR
IW07	WALL FINISH - WOOD PANEL, PREMIUM				2,180	SF	1.00	$97,808	2004	80		2084
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				21,510	SF	1.00	$256,256	2004	12	1	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				14,340	SF	1.00	$50,156	2004	10	3	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				32,270	SF	1.00	$359,171	2004	45		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				3,590	SF	1.00	$10,020	2004	24		2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	OTIS	0000004389	M1-02	1	EA	1.00	$257,984	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	1.00	$5,388	2004	25		2029
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				20	EA	1.00	$17,213	2004	25		2029
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	1.00	$3,329	2004	50		2054
FX10	PLUMBING FIXTURE - URINAL				4	EA	1.00	$4,315	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				18	EA	1.00	$30,509	2004	35		2039
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J2-01	1	EA	0.50	$503	2004	20		2024
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J2-01	1	EA	0.50	$503	2004	20		2024
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J1-01	1	EA	0.50	$503	2004	20		2024
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		J1-01	1	EA	0.50	$503	2004	20		2024
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				50,500	SF	1.00	$578,270	2004	50		2054
TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL	0000006869	M2-01	10	GAL	1.00	$1,008	2004	30		2034
WH01	WATER HEATER - COMMERCIAL, GAS (<=87 MBH INPUT)	AO SMITH	0000007708	M2-01	75	MBH	1.00	$3,551	2018	25		2043
PD02	DRAIN PIPING SYSTEM - CLASSROOM				50,500	SF	1.00	$867,606	2004	60		2064

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	SPRINKLER	0000009491	112	1	HP	1.00	$2,282	2011	25		2036
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DATA AIRE	0000002802	ROOF	3	TON	0.38	$2,610	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DATA AIRE	0000002803	ROOF	3	TON	0.38	$2,610	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DATA AIRE	0000002430	ROOF	3	TON	0.38	$2,610	2004	25		2029
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DATA AIRE	0000002813	229	3	TON	0.38	$2,132	2004	30		2034
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DATA AIRE	0000002832	IDF	3	TON	0.38	$2,132	2004	30		2034
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DATA AIRE	0000002833	BDF	3	TON	0.38	$2,132	2004	30		2034
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000002801	ROOF	1	EA	1.00	$3,773	2004	25		2029
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				50,500	SF	1.00	$1,796,497	2004	45		2049
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR		M2-01	1	HP	1.00	$1,693	2004	30		2034
HU40	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (70-85 TON)	RAC-1	0000002425	ROOF	80	TON	1.00	$636,442	2004	25		2029
HU40	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (70-85 TON)	RAC-2	0000002420	ROOF	80	TON	1.00	$636,442	2004	25		2029
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				50,500	SF	1.00	$171,083	2004	20		2024
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				50,500	SF	1.00	$47,607	2004	10	3	DR
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				50,500	SF	1.00	$25,296	2004	10	3	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FS01	FIRE SPRINKLER SYSTEM - WET				45,500	SF	1.00	$615,553	2004	80		2084
FS02	FIRE SPRINKLER SYSTEM - DRY				5,000	SF	1.00	$75,906	2004	25		2029
FA01	FIRE ALARM SYSTEM - DEVICES			112	50,500	SF	1.00	$217,051	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		112	1	EA	1.00	$13,857	2011	18		2029
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				50,500	SF	1.00	$1,254,071	2004	50		2054
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	2MDP2	0000003004	E1-01	1,200	AMP	1.00	$89,981	2004	40		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	2MDP	0000003005		1,200	AMP	1.00	$89,981	2004	40		2044
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	4MDP	0000003002	E1-01	2,500	AMP	1.00	$210,514	2004	40		2044
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-1 RET	0000002422	ROOF	15	HP	1.00	$6,433	2004	16		2020
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-2 RET	0000002429	ROOF	15	HP	1.00	$6,433	2004	16		2020
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	RAC-1 SUP	0000002421	ROOF	40	HP	1.00	$12,316	2004	18		2022
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	RAC-2 SUP	0000002428	ROOF	40	HP	1.00	$12,316	2004	18		2022
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			8	EA	1.00	$4,068	2005	20		2025
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			10	EA	1.00	$7,716	2010	20		2030

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			1	EA	1.00	$772	2015	20		2035
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	8	EA	1.00	$15,581	2004	40		2044
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	8	EA	1.00	$10,011	2004	20		2024
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				50,500	SF	1.00	$567,098	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				25,250	SF	1.00	$57,988	2004	20		2024
GN03	GENERATOR - DIESEL (100-200 KW)	GEN-TEB	0000009282	SITE	200	KW	1.00	$123,303	2015	25		2040
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	ATS-1 TEB	0000005239	E1-01	40	AMP	1.00	$3,480	2015	25		2040
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-2 TEB	0000005238	112	150	AMP	1.00	$5,956	2015	25		2040
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT	SERVICE COURT METAL SLAT PRIVACY SCREEN			100	LF	1.25	$6,050	2004	30		2034
							Grand Total:	$11,563,629				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		5	EA	$4,732	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		7	EA	$8,309	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		1	EA	$1,187	DR
C3010	WALL FINISH - APPLIED, STANDARD		70,540	SF	$196,878	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		21,510	SF	$256,256	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		14,340	SF	$50,156	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		50,500	SF	$25,296	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		50,500	SF	$47,607	DR
				TOTAL DEFERRED RENEWAL COST	$590,421	

No Projected Component Replacement Cost for Asset No. 2080 for 2018

No Projected Component Replacement Cost for Asset No. 2080 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-1 RET	15	HP	$6,825	2020
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-2 RET	15	HP	$6,825	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$13,650**	

No Projected Component Replacement Cost for Asset No. 2080 for 2021

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	RAC-1 SUP	40	HP	$13,862	2022
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	RAC-2 SUP	40	HP	$13,862	2022
D4030	FIRE ALARM SYSTEM - DEVICES		50,500	SF	$244,292	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$272,017**	

No Projected Component Replacement Cost for Asset No. 2080 for 2023

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		24,700	SF	$514,377	2024
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL		630	SF	$45,350	2024

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS	4	EA	$32,336	2024
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS	2	EA	$16,168	2024
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		50,500	SF	$677,145	2024
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		25,250	SF	$69,241	2024
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		8	EA	$11,954	2024
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM		50,500	SF	$204,281	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$601	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$601	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$601	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$601	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,573,255**	

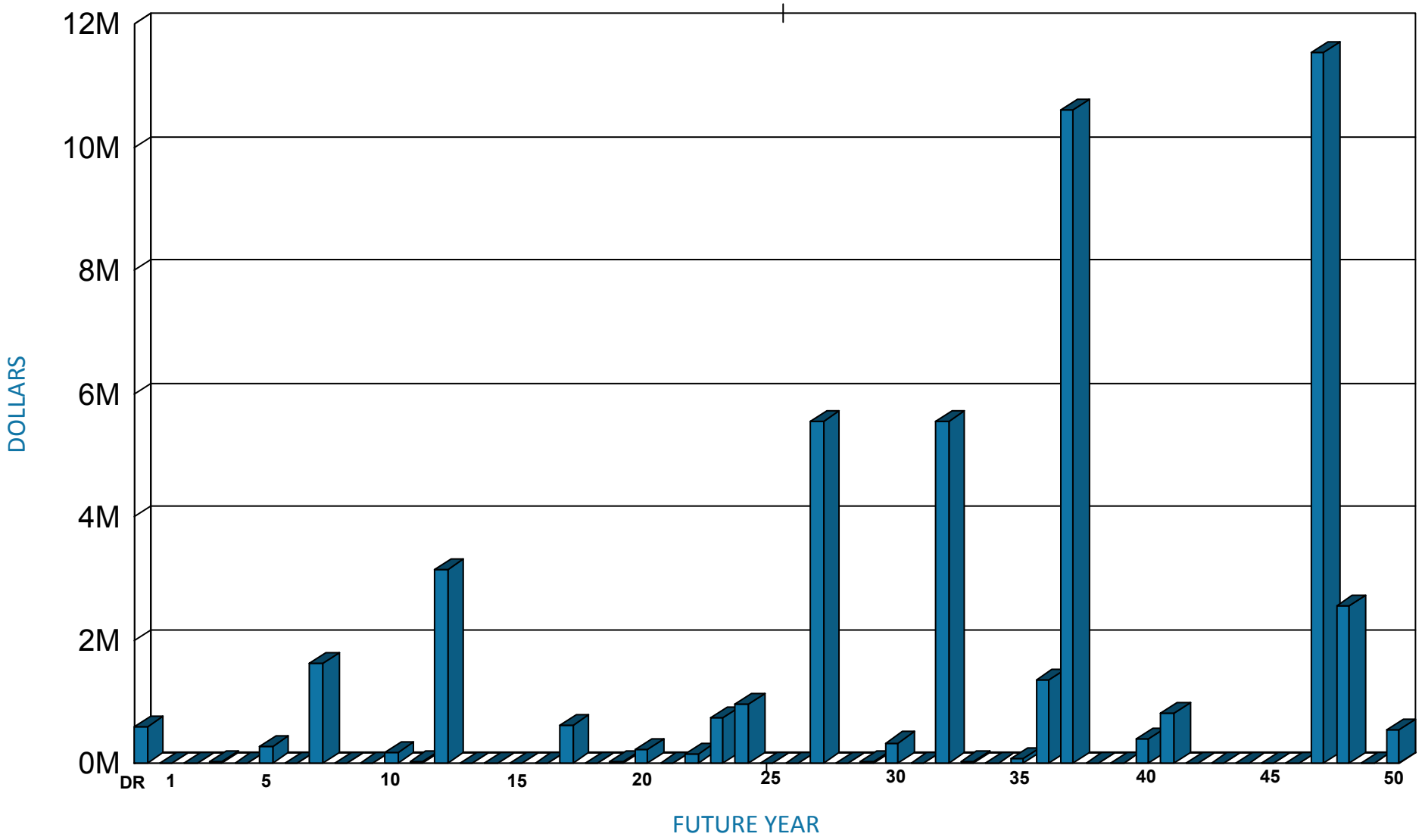
2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	8	EA	$5,004	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$5,004**	

No Projected Component Replacement Cost for Asset No. 2080 for 2026

No Projected Component Replacement Cost for Asset No. 2080 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.30

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

FS01

TECHNOLOGY EDUCATION BUILDING

BLDG NO. 2080

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.

1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF
FS02

FS01

TECHNOLOGY EDUCATION BUILDING

BLDG NO. 2080

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

2080001a 9/11/2018
Exterior finishes at the main entrance
South elevation

2080001e 9/11/2018
Car operating panel
Elevator cab

2080002a 9/11/2018
Exterior finishes
South elevation

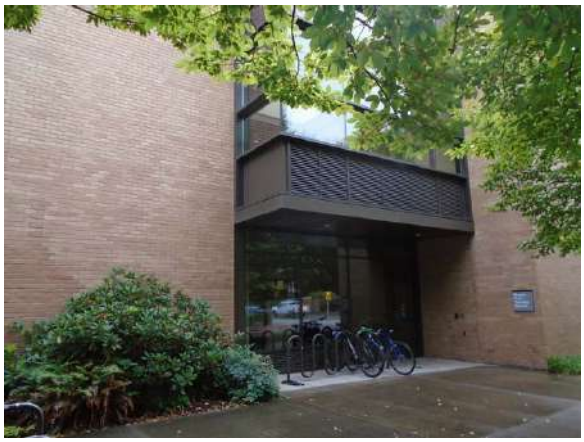
2080002e 9/11/2018
Condensing units
Roof

2080003a 9/11/2018
Typical glazing system
South elevation

2080003e 9/11/2018
Condensing units
Roof

2080004a 9/11/2018
Exterior finishes at the side entrance
West elevation

2080004e 9/11/2018
Exhaust fan
Roof



2080005a 9/11/2018
Exterior finishes at the side entrance
West elevation

2080005e 9/11/2018
Rooftop package unit
Roof

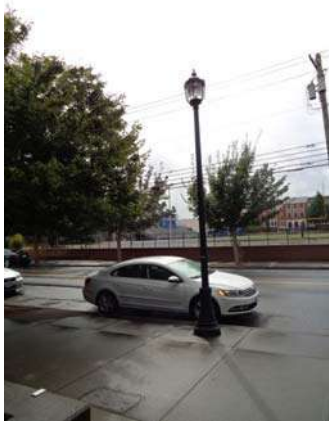
2080006a 9/11/2018
Exterior finishes and site conditions
North elevation

2080006e 9/11/2018
Panelboards
Second floor, room M2-01

2080007a 9/11/2018
Exterior finishes at the north entrance
North elevation

2080007e 9/11/2018
Fire extinguisher
Second floor, room M2-01

2080008a 9/11/2018
Exterior finishes at the service court
North elevation



2080008e 9/11/2018
Exterior lighting
Site

2080009a 9/11/2018
Exterior finishes at the side entrance
East elevation

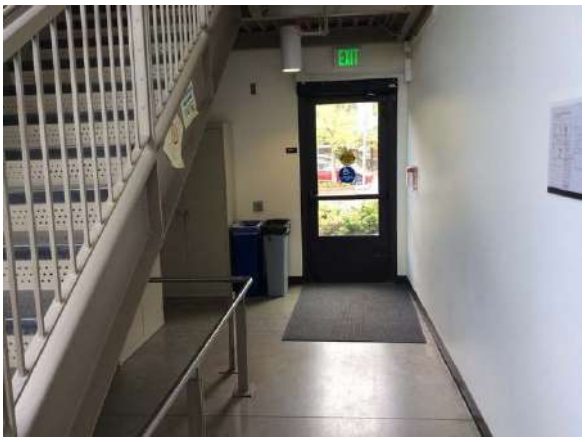
2080009e 9/11/2018
Exterior lighting
South elevation

2080010a 9/11/2018
Accessible elevator control panel
Elevator

2080010e 9/11/2018
Exterior lighting
West elevation

2080011a 9/11/2018
Stair with compliant railings
Stair S1-1

2080011e 9/11/2018
Exterior lighting
Site



2080012a 9/11/2018
Stair with compliant protection at low headroom
Stair S1-1

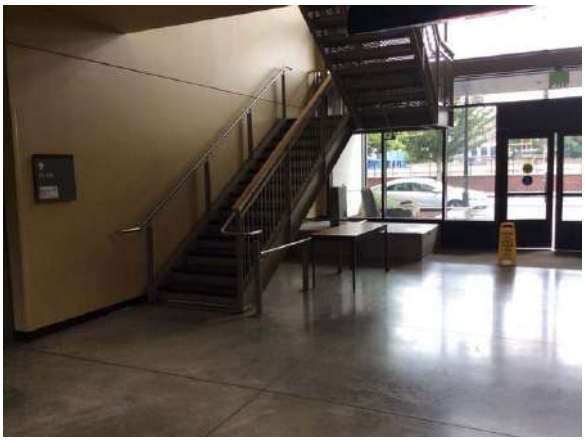
2080012e 9/11/2018
Exterior lighting
North elevation

2080013a 9/11/2018
Accessible drinking fountains
Lobby C1-02

2080013e 9/11/2018
Exterior lighting
Building exterior

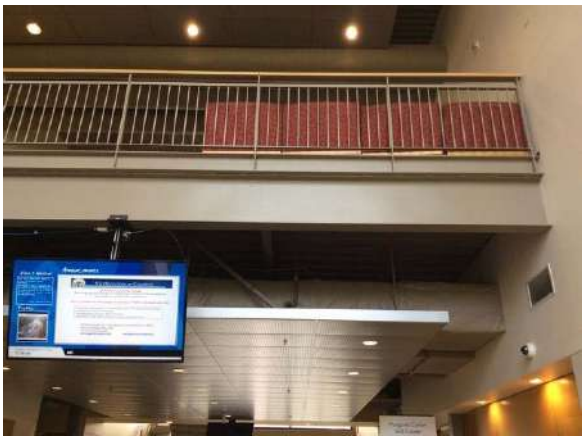
2080014a 9/11/2018
Main lobby finishes
Lobby C1-02

2080014e 9/11/2018
Exterior lighting
North elevation



2080015a 9/11/2018
Main lobby stair
Lobby C1-02

2080015e 9/11/2018
Exterior lighting
Site



2080016a 9/11/2018
Lobby second floor balcony and first floor ceiling
Lobby C1-02

2080016e 9/11/2018
Exterior lighting
Site

2080017a 9/11/2018
Exit doors, hardware, and signage
Lobby C1-02

2080017e 9/11/2018
Transformer
Site

2080018a 9/11/2018
Typical classroom finishes and casework
Room 117

2080018e 9/11/2018
Transformers
Site

2080019a 9/11/2018
Interior finishes in the video production room
Room 114

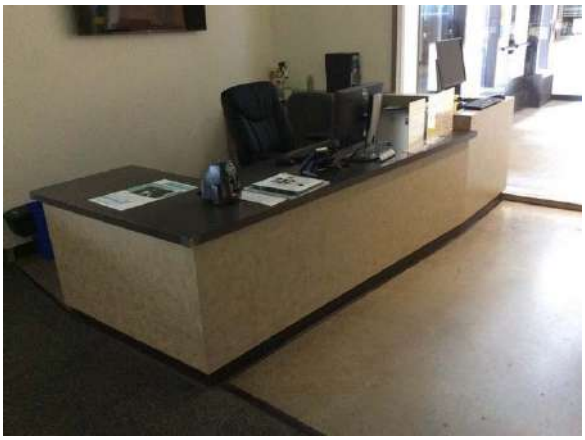
2080019e 9/11/2018
Generator
Site

2080020a 9/11/2018
Damaged interior door
Room J1-01

2080020e 9/11/2018
Panelboards
Site

2080021a 9/11/2018
Office suite door and hardware that is missing exit sign
Room 125

2080021e 9/11/2018
ATS
First floor, room E1-01



2080022a 9/11/2018

Reception casework

Room 125

2080022e 9/11/2018

Switchboard

First floor, room E1-01

2080023a 9/11/2018

Exit door without required signage

Room 125

2080023e 9/11/2018

Switchboards

First floor, room E1-01

2080024a 9/11/2018

Roof membrane, skylight, and mechanical screen wall

Roof

2080024e 9/11/2018

Panelboards

First floor, room E1-01

2080025a 9/11/2018
Roof membrane and skylight structure
Roof

2080025e 9/11/2018
Sprinkler head and interior lighting
First floor, room E1-01

2080026a 9/11/2018
Roof drain and low parapet without fall protection
Roof

2080026e 9/11/2018
Exterior lighting
East elevation

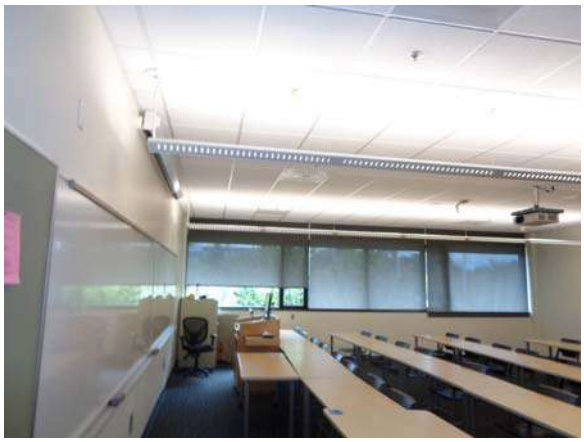
2080027a 9/11/2018
Roof drain, overflow scupper, and low parapet
Roof

2080027e 9/11/2018
Interior lighting
Second floor, room 217

2080028a 9/11/2018
Roof with center-mounted fall protection tie-off
Roof

2080028e 9/11/2018
Interior lighting
Second floor, room 218

2080029a 9/11/2018
Detail at the shading louvers
Roof



2080029e 9/11/2018
Interior lighting
Second floor, room 214

2080030a 9/11/2018
Ballasted membrane roof
Lower roof

2080030e 9/11/2018
Backflow preventers
Second floor, room J2-01

2080031a 9/11/2018

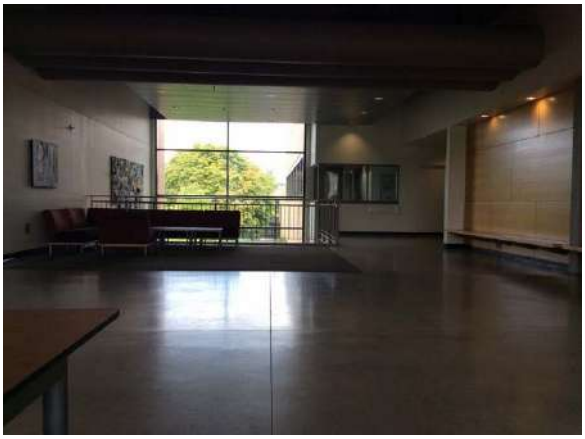
Typical corridor finishes

Corridor C2-04

2080031e 9/11/2018

Interior lighting

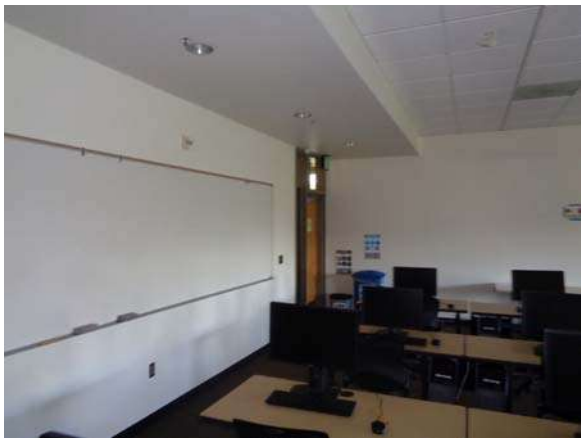
Second floor, room T2-01



2080032a 9/11/2018

Second floor lobby finishes

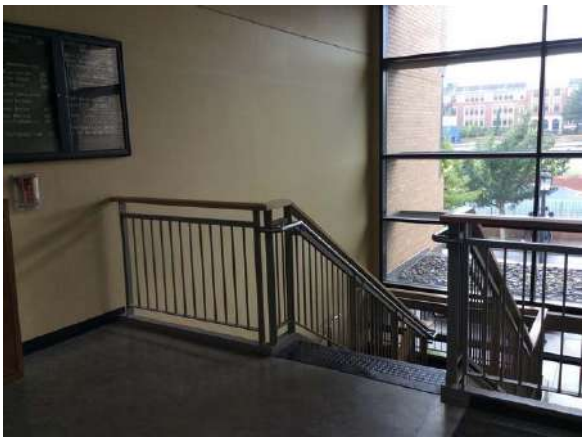
Lobby C2-02



2080032e 9/11/2018

Interior lighting

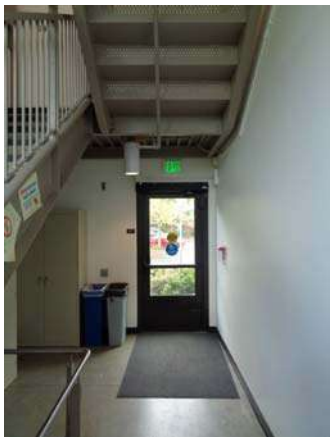
Second floor, room 226



2080033a 9/11/2018

Stair with compliant railings

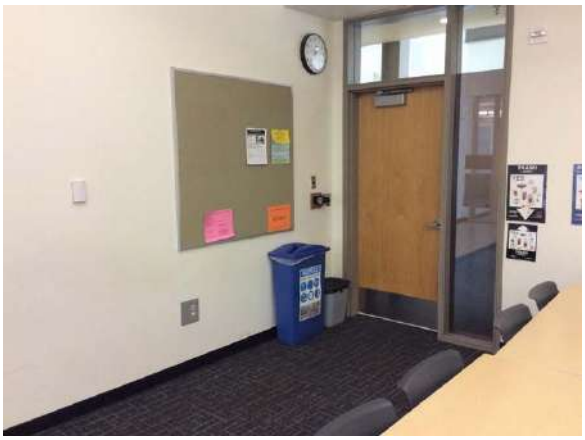
Stair S2-3



2080033e 9/11/2018

Exit sign

First floor, corridor



2080034a 9/11/2018
Typical classroom finishes
Room 217

2080034e 9/11/2018
Interior lighting
First floor, corridor

2080035a 9/11/2018
Typical classroom finishes
Room 217

2080035e 9/11/2018
Panelboards
First floor, room 112A

2080036a 9/11/2018
Fire-rated door label
Room 217

2080036e 9/11/2018
Sprinkler piping and compressor
First floor, room 112A

2080037a 9/11/2018

Detail at a typical skylight

Corridor C2-03

2080037e 9/11/2018

Fire alarm panels

First floor, room 112A

2080038a 9/11/2018

Restroom door with powered door opener

Room T2-02

2080038e 9/11/2018

Sprinkler head and interior lighting

First floor, room 112A

2080039a 9/11/2018

Toilet stall partitions

Room T2-02

2080039e 9/11/2018

Transformer and ATS

First floor, room 112A

2080040a 9/11/2018

Accessible toilet fixture and accessories

Room T2-02

2080040e 9/11/2018

Elevator machine and controller

First floor, room M1-01

2080041a 9/11/2018

Lavatories and finishes

Room T2-01

2080041e 9/11/2018

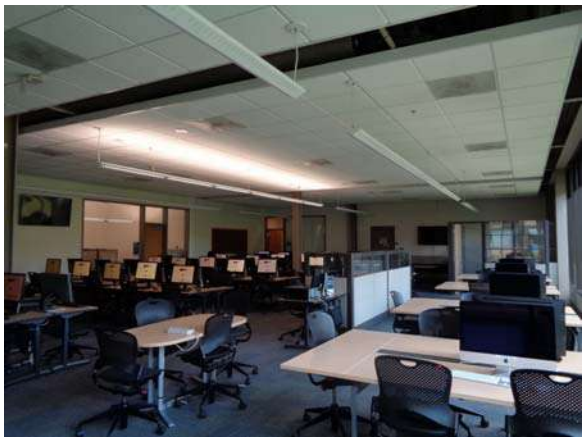
Interior lighting

First floor, room 114

2080042a 9/11/2018

Urinals, screen, and finishes

Room T2-01



2080042e 9/11/2018

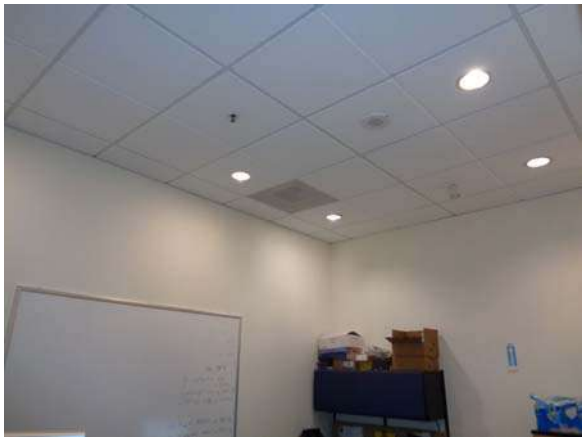
Interior lighting

First floor, room 125

2080043a 9/11/2018

Utility sink

Room J2-01



2080043e 9/11/2018

Interior lighting

First floor, room 125C

2080044a 9/11/2018

Classroom finishes

Room 227

2080044e 9/11/2018

Fan coil unit

First floor, room 125D

2080045a 9/11/2018

Classroom finishes and casework

Room 221

2080046a 9/11/2018

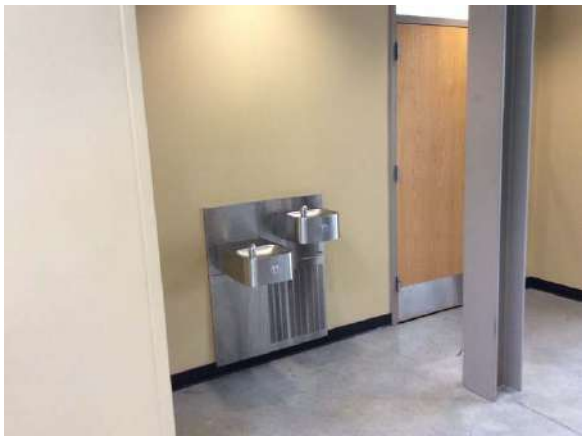
Doors with compliant hardware and signage

Corridor C2-04

2080047a 9/11/2018

Stair with compliant railings

Stair S2-4



2080048a 9/11/2018

Accessible drinking fountains

Corridor C2-04

2080049a 9/11/2018

Classroom finishes and casework

Room 222

2080050a 9/11/2018

Lobby area wall finishes

Lobby C2-02

2080051a 9/11/2018

Window wall at the south entrance

Lobby C2-02

2080052a 9/11/2018

Detail at the glazing system

Lobby C2-02

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2080
Asset Name	Technology Education Building
Year Built or Last Energy Renovation	2004

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

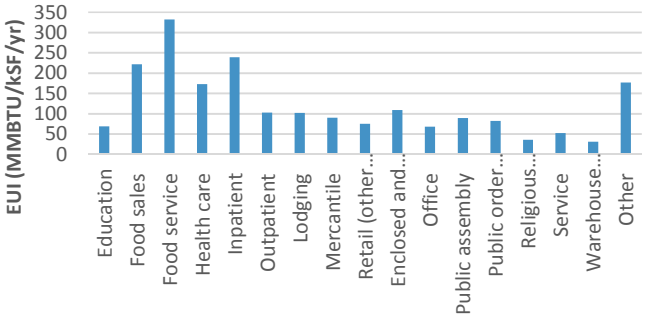
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

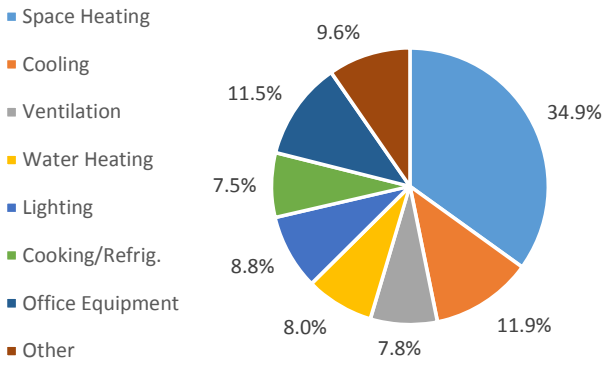


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

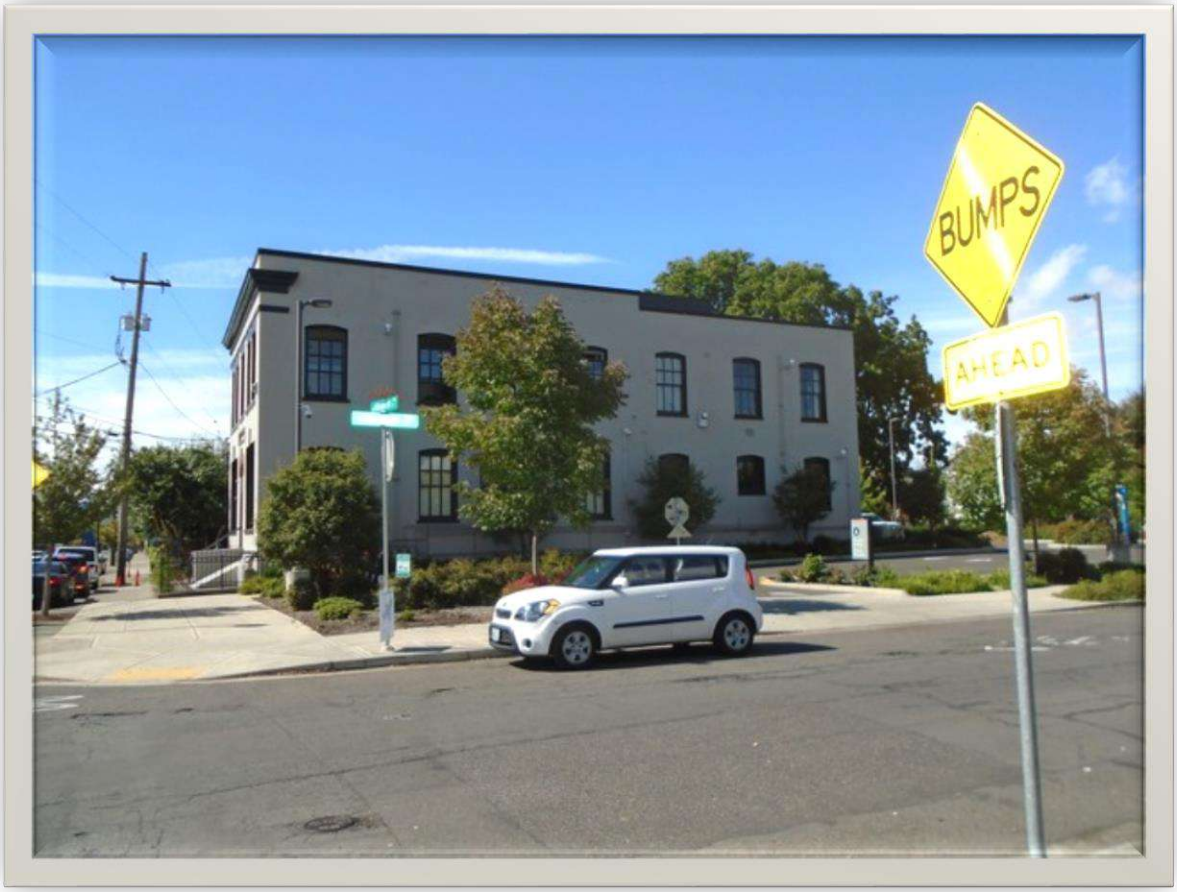
Cascade Campus

Facility Condition Assessment

1011 N Killingworth Street, 9 Units

Asset XX

Inspected September 14, 2018



ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

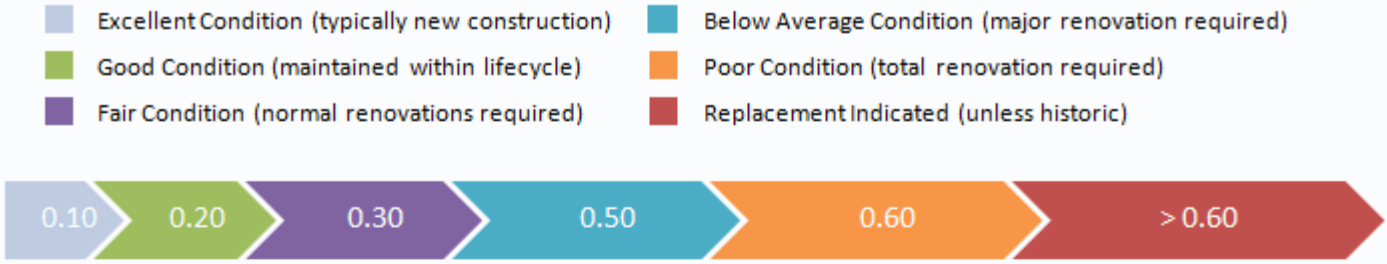
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

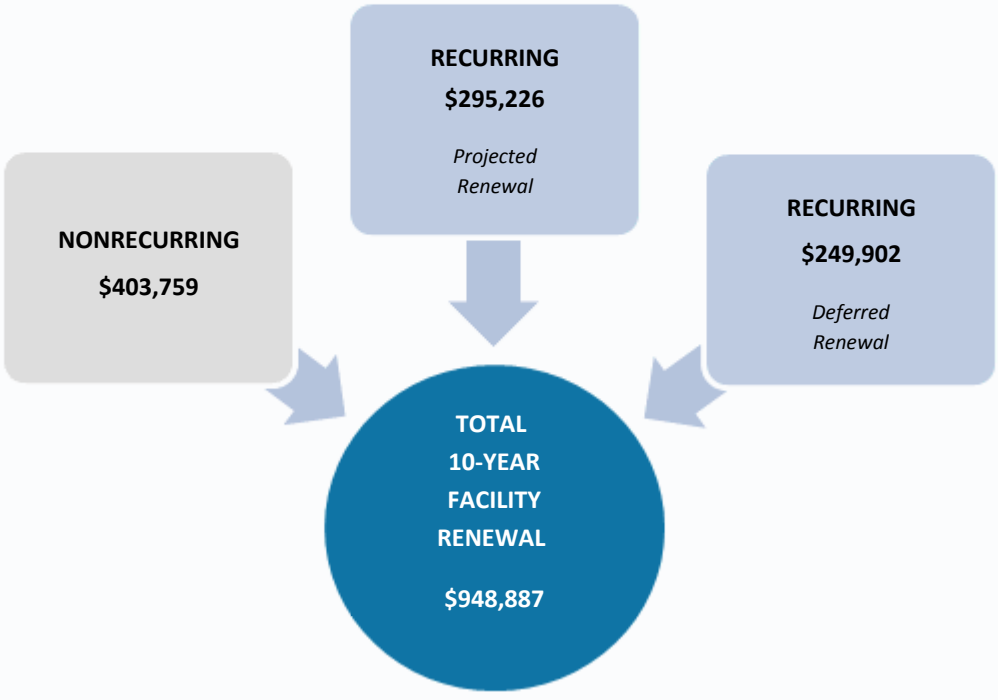
ASSET CODE	XX		
ASSET NAME	1011 N KILLINGWORTH STREET, 9 UNITS	**CURRENT REPLACEMENT VALUE**	$3,252,000
ASSET USE	Residential / Sgl. Family	**FACILITY CONDITION NEEDS INDEX**	0.29
YEAR BUILT	1907	**FACILITY CONDITION INDEX**	0.08
GSF	11,750	**10-YEAR $/SF**	80.76
INSPECTION DATE	09/14/2018		

FCNI Scale

The FCNI for this asset is **0.29**



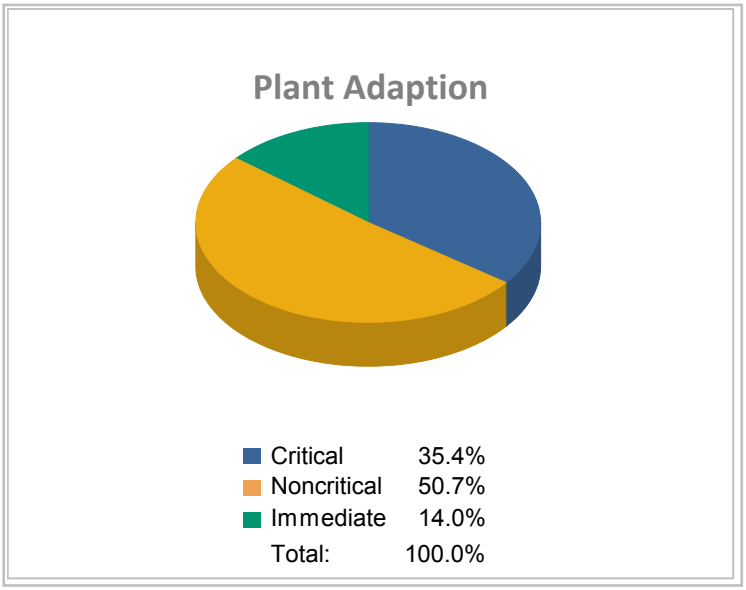
Total Facility Renewal Costs



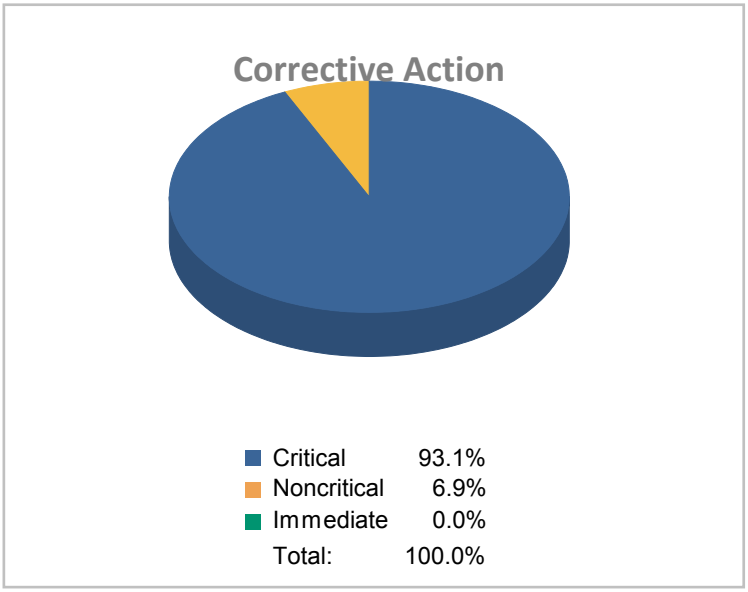
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$43,817**
2 - Critical	**$110,975**
3 - Noncritical	**$159,087**

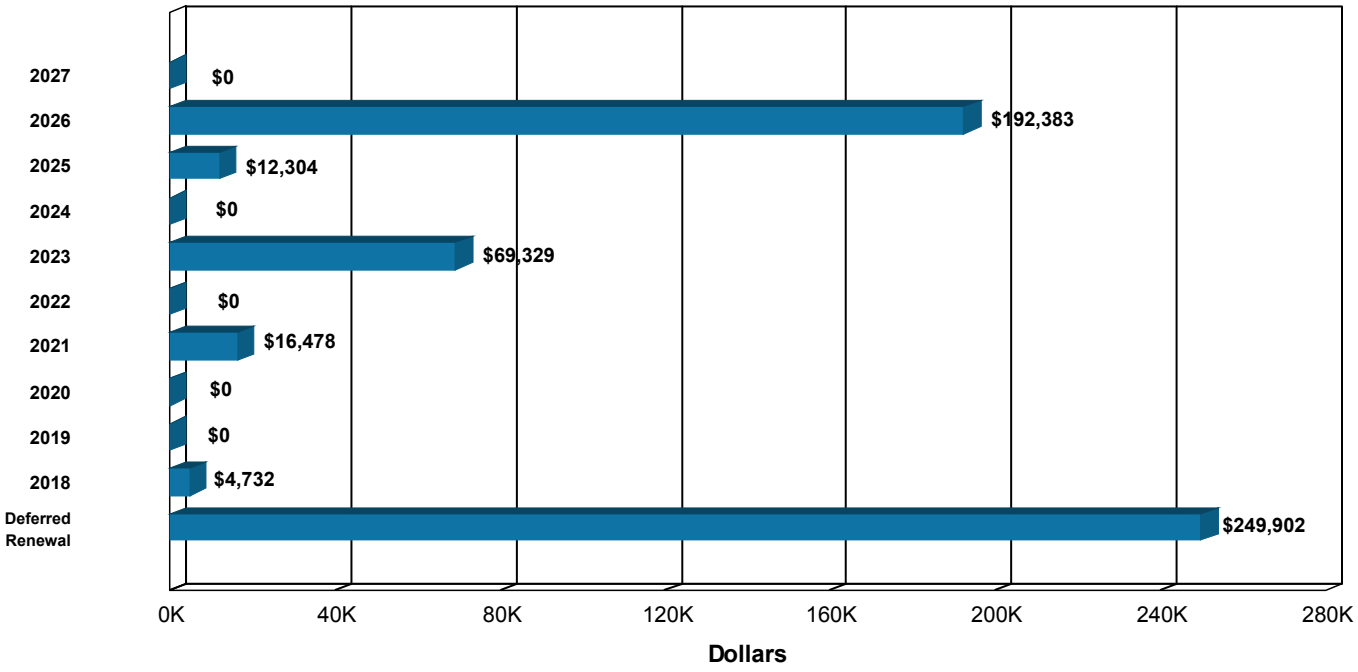


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$83,685**
3 - Noncritical	**$6,196**

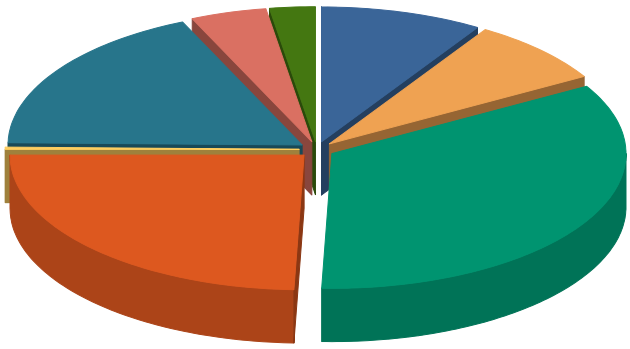


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$83,231	9%
Electrical	$73,718	8%
Exterior	$323,524	34%
Fire/Life Safety	$230,648	24%
Health	$0	0%
HVAC	$4,217	0%
Interiors	$169,045	18%
Plumbing	$42,069	4%
Site	$22,436	2%
Vert. Trans.	$0	0%
TOTAL	**$948,887**	

ASSET SUMMARY

The Telephone Exchange Building is a former commercial building constructed in 1907 and converted to a nine-unit apartment building in 2006. Located on the north side of North Killingsworth Street in the Humboldt neighborhood of Portland, Oregon, the building is a privately operated residential building belonging to Portland Community College. The 11,750 square-foot building has a partially below grade ground floor and two additional floors above. The ground floor has a small common area with laundry equipment and an apartment with an entrance from the west elevation through an areaway stair. The other eight apartments, four on each of the upper floors, have interior stairs. The building is a stucco finished brick structure with a flat, internally drained roof.

Information for this report was gathered during a site visit conducted on September 14, 2018.

Site

The site is flat and mostly paved with a 12-space asphalt parking area that is in good condition. However, the concrete sidewalks on the south and west of the building are in poor condition and should be replaced. Landscaping is mature and well maintained ornamental planting with a few trees. The parking area on the west side of the site and the entrance court on the south side are fenced with a steel picket fence on the south and a chain link fence on the west and north. The steel picket fence appears to be fairly old but is in good condition, only requiring repair or replacement of a number of bent top spikes and the repair or refurbishment of the vehicular gate on North Killingsworth Street. The chain link fence should last another ten or more years.

Exterior Structure

The roof is an asphaltic membrane that is in good condition but should reach the end of its anticipated lifecycle in the next ten years and be replaced. The exterior walls are brick with a stucco finish and appear to be in good condition. The roof has two skylights which should outlast the scope of this report. Most of the windows are large, wood, double-hung, single-glazed units and the exterior doors are old wood or metal clad wood. All of these exterior finishes are in need of replacement as well as repainting of trim work. The rear third floor apartments have horizontal sliding windows which should last another ten years.

Interior Finishes/Systems

Floor finishes include sheet vinyl, vinyl tile, and hardwood. The hardwood floors are assumed to be the original 1907 floors but are in good structural condition, only needing to be refinished. The sheet vinyl in the kitchens and baths and the vinyl tile stair treads should be replaced within the next ten years. The interior walls are painted or exposed brick. The painted walls are recommended to be repainted within

the next few years. The ceilings are painted hard surfaces and in good condition. The interior doors and the kitchen casework are also in good condition and no work is recommended at this time.

Accessibility

This building was recently renovated but has a number of barriers to full accessibility. The entrances are reached by way of stairs with no provision made for wheelchair access. Once inside, all of the floor level changes are accomplished with stairs, again with no provision for wheelchair access. It is recommended that stair climbers be added at each of the exterior and interior stairs. Although the stairs generally have compliant handrails, the front (south) stair should have a handrail extension added to the one handrail lacking that feature. This is recommended to be a maintenance task. The door hardware is compliant with accessibility standards but the one bathroom available for inspection did not provide the required accessible features. If not provided, at least one unit should have a fully accessible bathroom.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits appears to be adequate for this facility. Emergency lighting is provided by twin-beam light fixtures that contain internal batteries in the event of a power outage. These units are in the corridors and appear to provide adequate coverage.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The roof access ladder is not compliant with OSHA standards and the upper transition to the roof hatch lacks adequate headroom. These conditions should be corrected to comply with OSHA fixed ladder requirements. An allowance is included with this report to devise and implement a solution.

The facility is believed to be monitored by individual residential-grade fire alarm systems serving apartments. Additionally, local only smoke detectors are believed to serve common spaces. It is recommended that an addressable fire alarm system be installed throughout. Specify a point addressable supervised main fire alarm panel with an annunciator. This includes pull stations, audible and visible alarms, smoke and heat detectors, and an associated wiring network.

Fire suppression is provided by manual chemical type fire extinguishers mounted on the walls. While this appears to be an adequate application, it is recommended that an automatic sprinkler system be installed throughout to reduce overall liability.

HVAC

Gas-fired furnaces suspended from the ceiling provide heating. The unit observed during the site visit was manufactured by Lennox and appears to be well maintained. Local thermostats control the HVAC units and distribution equipment consists of gas piping. Based on an estimated age, the furnaces have remaining service life beyond the scope of this report. However, the controls may need to be considered for replacement due to age. Facility exhaust is provided by small odor fan/light fixtures in each apartment bathroom. The unit observed on the day of the site visit appeared to be well maintained and operating properly. Based on its estimated age, the odor fans will reach the end of their service life within the scope of this report.

Electrical

Power is supplied to the facility at 120/208 volts to exterior meters. Power is then supplied to the apartments or common spaces via panelboards. Circuits are energized for mechanical lighting and general purpose loads. The electrical equipment, that could be viewed, was in good condition and has remaining service life beyond the scope of this report.

The interior lighting consists of suspended, recessed, and surface-mount fixtures equipped with acrylic or no lenses and lamped with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. However, replacement may need to be considered on a low priority basis due to lifecycle depletion.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures with additional lighting provided by pole-mounted fixtures on the site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. The exterior lighting appears to be new and in excellent condition.

Plumbing

The facility utilizes a copper piping network for domestic water supply. Backflow preventers protect the domestic water system from cross contamination. Drain piping, that could be viewed, is cast-iron with no hub connections and plastic applications. The piping systems are believed to have been upgraded and have substantial remaining service life. However, some of the backflow preventers will reach the end of their service life toward the end of the next ten years.

Domestic hot water for common spaces is provided by two residential-grade electric water heaters that have tank capacities of 40 gallons each and were installed at different times. Expansion tanks support the water heaters. The water heaters will reach lifecycle depletion in the next ten years. Domestic hot water to each apartment is provided by residential-grade electric water heaters that are estimated to have tank capacities of 30 gallons and were installed in the last ten years. Based on their short lifecycle, replacement of these water heaters should be anticipated over the scope of this report.

The plumbing fixtures include water closets, lavatories, kitchen sinks and tub/showers. The kitchen sinks and tub/shower fixtures are nearing the end of their normal lifecycle and recommended for replacement. The lavatories and water closets should last another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

September 14, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	41,616	41,616	0	0	0	0	0	0	0	0	0	0	0	0	$83,231
EXTERIOR	0	0	0	249,902	4,732	0	0	0	0	0	0	0	68,890	0	$323,524
INTERIOR	0	83,685	0	0	0	0	0	14,655	0	69,329	0	0	1,376	0	$169,045
PLUMBING	0	0	0	0	0	0	0	1,823	0	0	0	12,304	27,942	0	$42,069
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	4,217	0	$4,217
FIRE/LIFE SAFETY	2,202	69,360	159,087	0	0	0	0	0	0	0	0	0	0	0	$230,648
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	73,718	0	$73,718
SITE	0	0	6,196	0	0	0	0	0	0	0	0	0	16,240	0	$22,436
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$43,817	$194,660	$165,282	$249,902	$4,732	$0	$0	$16,478	$0	$69,329	$0	$12,304	$192,383	$0	$948,887
TOTAL NONRECURRING PROJECT NEEDS			$403,759	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$545,127	

CURRENT REPLACEMENT VALUE	$3,252,000
FACILITY CONDITION NEEDS INDEX	0.29
FACILITY CONDITION INDEX	0.08

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
11,750	$948,887	$80.76

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$83,231	$0	$83,231
EXTERIOR	$0	$323,524	$323,524
INTERIOR	$83,685	$85,360	$169,045
PLUMBING	$0	$42,069	$42,069
HVAC	$0	$4,217	$4,217
FIRE/LIFE SAFETY	$230,648	$0	$230,648
ELECTRICAL	$0	$73,718	$73,718
SITE	$6,196	$16,240	$22,436
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$403,759**	**$545,127**	**$948,887**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
XXAC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	41,616
XXFS04	IMPROVE ROOF ACCESS LADDER SAFETY	B3020	1	Plant Adaption	2,202
XXFS03	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	16,580
XXAC02	STAIR CLIMBER INSTALLATION	C1010	2	Plant Adaption	41,616
XXIS01	REFINISH HARDWOOD FLOORS	C3020	2	Corrective Action	83,685
XXFS01	FIRE ALARM SYSTEM INSTALLATION	D5030	2	Plant Adaption	52,779
XXFS02	FIRE SPRINKLER SYSTEM INSTALLATION	D4010	3	Plant Adaption	159,087
XXSI01	SITE PEDESTRIAN PAVING RENEWAL	G2030	3	Corrective Action	6,196
				TOTAL	**$403,759**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
XX	EF04	EXTERIOR DOOR OR WINDOW APPLIED FINISH				B2010	Deferred Renewal	21,756
XX	EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				B2010	Deferred Renewal	119,768
XX	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ORIGINAL			B2020	Deferred Renewal	79,621
XX	DR09	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM	DOUBLE DR		CELLAR	B2030	Deferred Renewal	5,751
XX	DR09	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM			ENTRIES	B2030	Deferred Renewal	23,005
XX	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	DOUBLE DR		CELLAR	B2030	2018	946
XX	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			ENTRIES	B2030	2018	3,786
XX	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2021	14,655
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	RHEEM		1ST FL	D2020	2021	1,823
XX	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2023	69,329
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 9	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 1	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 2	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 3	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 4	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 5	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 6	D2020	2025	1,367

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 7	D2020	2025	1,367
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 8	D2020	2025	1,367
XX	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2026	68,890
XX	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				C3020	2026	1,376
XX	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2026	6,953
XX	FX09	PLUMBING FIXTURE - BATHTUB WITH FIXTURES				D2010	2026	14,697
XX	BF02	BACKFLOW PREVENTER (1-2 INCHES)	CONBRACO IND		1ST FL	D2020	2026	2,235
XX	BF02	BACKFLOW PREVENTER (1-2 INCHES)	CONBRACO IND		1ST FL	D2020	2026	2,235
XX	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	RELIANCE		1ST FL	D2020	2026	1,823
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 1 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 2 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 3 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 4 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 5 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 6 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 7 RR	D3040	2026	273
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 8 RR	D3040	2026	273

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
XX	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 9 RR	D3040	2026	273
XX	BA17	HVAC CONTROLS - TERMINAL ASSEMBLIES - RESIDENCE				D3060	2026	1,764
XX	LI17	LIGHTING SYSTEM, INTERIOR - RESIDENCE				D5020	2026	69,125
XX	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2026	4,593
XX	SI10	VEHICLE GATE, SLIDING OR SWINGING, MOTORIZED				G2040	2026	16,240
							TOTAL	**$545,127**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
6	XXIS01	REFINISH HARDWOOD FLOORS	2	$83,685
8	XXSI01	SITE PEDESTRIAN PAVING RENEWAL	3	$6,196
		TOTAL FOR CORRECTIVE ACTION		**$89,880**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	XXFS04	IMPROVE ROOF ACCESS LADDER SAFETY	1	$2,202
2	XXAC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	1	$41,616
3	XXFS01	FIRE ALARM SYSTEM INSTALLATION	2	$52,779
4	XXFS03	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$16,580
5	XXAC02	STAIR CLIMBER INSTALLATION	2	$41,616
7	XXFS02	FIRE SPRINKLER SYSTEM INSTALLATION	3	$159,087
		TOTAL FOR PLANT ADAPTION		**$313,879**
		GRAND TOTAL:		**$403,759**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	XXAC01	1	Plant Adaption	BUILDING ENTRY ACCESSIBILITY UPGRADES	$41,616
5	XXAC02	2	Plant Adaption	STAIR CLIMBER INSTALLATION	$41,616
				TOTAL FOR ACCESSIBILITY	**$83,231**
1	XXFS04	1	Plant Adaption	IMPROVE ROOF ACCESS LADDER SAFETY	$2,202
3	XXFS01	2	Plant Adaption	FIRE ALARM SYSTEM INSTALLATION	$52,779
4	XXFS03	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$16,580
7	XXFS02	3	Plant Adaption	FIRE SPRINKLER SYSTEM INSTALLATION	$159,087
				TOTAL FOR FIRE/LIFE SAFETY	**$230,648**
6	XXIS01	2	Corrective Action	REFINISH HARDWOOD FLOORS	$83,685
				TOTAL FOR INTERIORS	**$83,685**
8	XXSI01	3	Corrective Action	SITE PEDESTRIAN PAVING RENEWAL	$6,196
				TOTAL FOR SITE	**$6,196**
				GRAND TOTAL:	**$403,759**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

IMPROVE ROOF ACCESS LADDER SAFETY

Project Number:	XXFS04	**Category Code:** FS5A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	12/20/2018	**Element:**	DESIGNATION

Code Application:		Subclass/Savings:	Project Location:
OSHA	1910.27	Not Applicable	Item Only: Floor(s) 3,R

Description

The interior roof access ladder requires a lateral transfer to reach the final section to reach the roof. This transfer requires an unsafe step off of the ladder into a space with low headroom and no fall protection where the ladder passes through the ceiling. It is recommended that the ceiling at this point be modified to provide a safe lateral transfer to a platform with adequate headroom to promote user safety and limit liability.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Vertical safety ladder modifications	LF	18	$60.00	$1,080	$28.00	$504	$1,584
			Base Material/Labor Costs	**$1,080**		**$504**	
			Indexed Material/Labor Costs	**$1,074**		**$508**	**$1,582**
						Construction Mark Up at 20.0%	**$316**
						Original Construction Cost	**$1,898**
Date of Original Estimate:	12/20/2018					**Inflation**	**$0**
						Current Year Construction Cost	**$1,898**
						Professional Fees at 16.0%	**$304**
						TOTAL PROJECT COST	**$2,202**

All costs shown as Present Value

BUILDING ENTRY ACCESSIBILITY UPGRADES

Project Number:	XXAC01	**Category Code:** AC2A	
Priority Sequence:	2		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	12/16/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	410	Not Applicable	Undefined: Floor(s) 1

Description

Current accessibility legislation requires that building entrances be wheelchair accessible. To comply with the intent of this legislation, it is recommended that a compliant stair climber system be installed at each of the three exterior entrances.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair lift/stair climber, conduit, wiring, tools, and supplies	EA	3	$8,304	$24,912	$1,698	$5,093	$30,005
Base Material/Labor Costs				**$24,912**		**$5,093**	
Indexed Material/Labor Costs				**$24,763**		**$5,134**	**$29,896**
Construction Mark Up at 20.0%							**$5,979**
Original Construction Cost							**$35,876**
Date of Original Estimate: 12/16/2018						**Inflation**	**$0**
Current Year Construction Cost							**$35,876**
Professional Fees at 16.0%							**$5,740**
TOTAL PROJECT COST							**$41,616**

All costs shown as Present Value

FIRE ALARM SYSTEM INSTALLATION

Project Number:	XXFS01
Priority Sequence:	3
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/12/2018

Category Code: FS2A

System:	FIRE/LIFE SAFETY
Component:	DETECTION ALARM
Element:	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	702.1	Not Applicable	Floor-wide: Floor(s) 1,2,3
NFPA	1, 101		

Description

Install a modern fire alarm system to serve this facility. Specify a point addressable supervised main fire alarm panel with an annunciator. This includes pull stations, audible and visible alarms, smoke and heat detectors, and an associated wiring network. Install all devices in accordance with current NFPA and ADA requirements. The system should be monitored to report activation or trouble to an applicable receiving station.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Smoke and heat detectors, manual pull stations, audible and visual alarms, wiring, conduit, and cut and patching materials	SF	11,750	$1.83	$21,503	$1.26	$14,805	$36,308
Fire alarm control panel(up to 50 points), annunciator, and cut and patching materials	EA	1	$844	$844	$774	$774	$1,618
			Base Material/Labor Costs	**$22,347**		**$15,579**	
			Indexed Material/Labor Costs	**$22,213**		**$15,703**	**$37,916**
					Construction Mark Up at 20.0%		**$7,583**
					Original Construction Cost		**$45,499**
Date of Original Estimate: 12/12/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$45,499**
					Professional Fees at 16.0%		**$7,280**
					TOTAL PROJECT COST		**$52,779**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	XXFS03
Priority Sequence:	4
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/16/2018

Category Code: FS6A

System:	FIRE/LIFE SAFETY
Component:	GENERAL
Element:	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	15	$304	$4,560	$488	$7,320	$11,880
Base Material/Labor Costs				**$4,560**		**$7,320**	
Indexed Material/Labor Costs				**$4,533**		**$7,379**	**$11,911**
Construction Mark Up at 20.0%							**$2,382**
Original Construction Cost							**$14,293**
Date of Original Estimate: 12/16/2018						**Inflation**	**$0**
Current Year Construction Cost							**$14,293**
Professional Fees at 16.0%							**$2,287**
TOTAL PROJECT COST							**$16,580**

All costs shown as Present Value

STAIR CLIMBER INSTALLATION

Project Number:	XXAC02	**Category Code:** AC3A	
Priority Sequence:	5		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/16/2018	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	410	Not Applicable	Floor-wide: Floor(s) 1,2,3

Description

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. The entrances are reached by way of stairs with no provision made for wheelchair access. Once inside all of the floor level changes are accomplished with stairs, again with no provision for wheelchair access. It is recommended that stair climbers be added at each of the interior stairs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair lift/stair climber, conduit, wiring, tools, and supplies	EA	3	$8,304	$24,912	$1,698	$5,093	$30,005
Base Material/Labor Costs				**$24,912**		**$5,093**	
Indexed Material/Labor Costs				**$24,763**		**$5,134**	**$29,896**
Construction Mark Up at 20.0%							**$5,979**
Original Construction Cost							**$35,876**
Date of Original Estimate: 12/16/2018						**Inflation**	**$0**
Current Year Construction Cost							**$35,876**
Professional Fees at 16.0%							**$5,740**
TOTAL PROJECT COST							**$41,616**

All costs shown as Present Value

REFINISH HARDWOOD FLOORS

Project Number:	XXIS01	**Category Code:** IS1B	
Priority Sequence:	6		
Priority Class:	Critical	**System:**	INTERIOR FINISHES/SYS
Project Class:	Corrective Action	**Component:**	FLOOR
Date Basis:	9/14/2018	**Element:**	FINISHES-WET

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1,2,3

Description

The hardwood flooring in the individual units is worn. Age and use-related wear have resulted in a very timeworn finish. It is recommended that the floor surface be sanded and refinished within the purview of this report. Some replacement of the strip flooring may be necessary.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Sand and refinish hardwood floors	SF	8,490	$1.81	$15,367	$5.24	$44,488	$59,855
Base Material/Labor Costs				**$15,367**		**$44,488**	
Indexed Material/Labor Costs				**$15,275**		**$44,844**	**$60,118**
Construction Mark Up at 20.0%							**$12,024**
Original Construction Cost							**$72,142**
Date of Original Estimate: 9/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$72,142**
Professional Fees at 16.0%							**$11,543**
TOTAL PROJECT COST							**$83,685**

All costs shown as Present Value

FIRE SPRINKLER SYSTEM INSTALLATION

Project Number:	XXFS02	**Category Code:** FS3A	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	SUPPRESSION
Date Basis:	12/12/2018	**Element:**	SPRINKLERS

Code Application:		Subclass/Savings:	Project Location:
NFPA	1, 13, 13R, 101	Not Applicable	Floor-wide: Floor(s) 1,2,3

Description

As a part of future renovation efforts, it is recommended that this facility be fully protected by an automatic, wet-pipe sprinkler system.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install a wet-pipe sprinkler system, including valves, piping, sprinkler heads, piping supports, etc.	SF	11,750	$4.37	$51,348	$5.34	$62,745	$114,093
Base Material/Labor Costs				**$51,348**		**$62,745**	
Indexed Material/Labor Costs				**$51,039**		**$63,247**	**$114,286**
Construction Mark Up at 20.0%							**$22,857**
Original Construction Cost							**$137,144**
Date of Original Estimate: 12/12/2018						**Inflation**	**$0**
Current Year Construction Cost							**$137,144**
Professional Fees at 16.0%							**$21,943**
TOTAL PROJECT COST							**$159,087**

All costs shown as Present Value

SITE PEDESTRIAN PAVING RENEWAL

Project Number:	XXSI01
Priority Sequence:	8
Priority Class:	Noncritical
Project Class:	Corrective Action
Date Basis:	12/16/2018

Category Code: SI1A

System:	SITE
Component:	ACCESS
Element:	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Undefined: Floor(s) 1

Description

Concrete paving at the south entrance and along the west side of the building is cracked, and in some places, missing creating trip hazards and allowing water penetration and further damage. It is recommended that all of the concrete paving along the south and west side of the building be replaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian concrete walkways	SF	500	$4.23	$2,115	$4.66	$2,330	$4,445
Base Material/Labor Costs				**$2,115**		**$2,330**	
Indexed Material/Labor Costs				**$2,102**		**$2,349**	**$4,451**
Construction Mark Up at 20.0%							**$890**
Original Construction Cost							**$5,341**
Date of Original Estimate: 12/16/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,341**
Professional Fees at 16.0%							**$855**
TOTAL PROJECT COST							**$6,196**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EF04	EXTERIOR DOOR OR WINDOW APPLIED FINISH				42	EA	1.00	$21,756	2006	11		DR
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				8,890	SF	1.12	$119,768	1907	30	80	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ORIGINAL			440	SF	1.12	$79,621	1907	40	70	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	2006 INSTALL			20	SF	1.12	$3,619	2006	40		2046
DR09	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM			ENTRIES	4	LEAF	1.00	$23,005	1907	35	75	DR
DR09	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM	DOUBLE DR		CELLAR	1	LEAF	1.00	$5,751	1907	35	75	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			ENTRIES	4	EA	1.00	$3,786	2006	12		2018
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	DOUBLE DR		CELLAR	1	EA	1.00	$946	2006	12		2018
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				3,950	SF	1.00	$68,890	2006	20		2026
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				18	SF	1.00	$5,151	2006	35		2041
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				18	LEAF	1.00	$39,806	2006	60		2066
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				18	EA	1.00	$13,552	2006	35		2041
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			KITCHENS	207	LF	1.00	$116,102	2006	30		2036
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			LAUNDRY RM	10	LF	1.00	$5,609	2006	30		2036
IW01	WALL FINISH - APPLIED, STANDARD				24,840	SF	1.00	$69,329	2011	12		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				200	SF	1.00	$1,376	2006	20		2026
IF04	FLOORING - VINYL SHEET, STANDARD				1,300	SF	1.00	$14,655	2006	15		2021
IF10	FLOORING - HARDWOOD STRIP, STANDARD				8,490	SF	1.00	$135,614	1907	50	72	2029
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				9,990	SF	1.00	$27,882	2011	24		2035
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				9	EA	1.00	$7,746	2006	25		2031
FX04	PLUMBING FIXTURE - SINK, KITCHEN				9	EA	1.00	$6,953	2006	20		2026
FX09	PLUMBING FIXTURE - BATHTUB WITH FIXTURES				9	EA	1.00	$14,697	2006	20		2026
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE				9	EA	1.00	$5,844	2006	35		2041
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		1ST FL	1	EA	0.75	$755	2011	20		2031
BF02	BACKFLOW PREVENTER (1-2 INCHES)	CONBRACO IND		1ST FL	1	EA	1.00	$2,235	2006	20		2026
BF02	BACKFLOW PREVENTER (1-2 INCHES)	CONBRACO IND		1ST FL	1	EA	1.00	$2,235	2006	20		2026
PS17	SUPPLY PIPING SYSTEM - RESIDENCE				11,750	SF	1.00	$35,025	2006	50		2056
TK06	EXPANSION TANK, STL PT (<20 GAL)	WATTS		1ST FL	10	GAL	1.00	$1,008	2006	30		2036
TK06	EXPANSION TANK, STL PT (<20 GAL)	WATTS		1ST FL	15	GAL	1.00	$1,512	2006	30		2036
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	RELIANCE		1ST FL	40	GAL	1.00	$1,823	2011	15		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	RHEEM		1ST FL	40	GAL	1.00	$1,823	2006	15		2021
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 9	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 1	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 2	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 3	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 4	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 5	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 6	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 7	30	GAL	1.00	$1,367	2010	15		2025
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)			APARTMENT 8	30	GAL	1.00	$1,367	2010	15		2025
PD17	DRAIN PIPING SYSTEM - RESIDENCE				11,750	SF	1.00	$52,621	2006	60		2066
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 1 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 2 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 3 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 4 DEN	60	MBH	1.00	$2,809	2006	25		2031

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 5 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 6 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 7 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 8 DEN	60	MBH	1.00	$2,809	2006	25		2031
HU15	EVAPORATOR UNIT, NATURAL GAS HEAT (45-100 MBH)			APT 9 DEN	60	MBH	1.00	$2,809	2006	25		2031
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 1 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 2 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 3 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 4 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 5 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 6 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 7 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 8 RR	1	HP	0.10	$273	2006	20		2026
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		APT 9 RR	1	HP	0.10	$273	2006	20		2026
HV17	HVAC DISTRIBUTION NETWORKS - RESIDENCE				11,750	SF	0.15	$17,650	2006	45		2051

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA17	HVAC CONTROLS - TERMINAL ASSEMBLIES - RESIDENCE				11,750	SF	0.15	$1,764	2006	20		2026
SE17	ELECTRICAL DISTRIBUTION NETWORK - RESIDENCE				11,750	SF	1.00	$107,582	2006	50		2056
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			4	EA	1.00	$2,034	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			2	EA	1.00	$1,543	2015	20		2035
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			SITE	1	EA	1.00	$4,402	2015	40		2055
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	1	EA	1.00	$1,251	2015	20		2035
LI17	LIGHTING SYSTEM, INTERIOR - RESIDENCE				11,750	SF	1.00	$69,125	2006	20		2026
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				2,000	SF	1.00	$4,593	2006	20		2026
SI10	VEHICLE GATE, SLIDING OR SWINGING, MOTORIZED				1	EA	1.00	$16,240	2006	20		2026
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT	CHAIN LINK			110	LF	1.00	$5,324	2006	30		2036
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT	STEEL PICKET			150	LF	1.50	$10,890	2006	30		2036
							Grand Total:	$1,172,932				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE		8,890	SF	$119,768	DR
B2010	EXTERIOR DOOR OR WINDOW APPLIED FINISH		42	EA	$21,756	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ORIGINAL	440	SF	$79,621	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM		4	LEAF	$23,005	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM	DOUBLE DR	1	LEAF	$5,751	DR
				TOTAL DEFERRED RENEWAL COST	$249,902	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		4	EA	$3,786	2018
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	DOUBLE DR	1	EA	$946	2018
	2018			PROJECTED COMPONENT REPLACEMENT COST	$4,732	

No Projected Component Replacement Cost for Asset No. XX for 2019

No Projected Component Replacement Cost for Asset No. XX for 2020

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	RHEEM	40	GAL	$1,992	2021
C3020	FLOORING - VINYL SHEET, STANDARD		1,300	SF	$16,014	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$18,006	

No Projected Component Replacement Cost for Asset No. XX for 2022

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		24,840	SF	$80,371	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$80,371	

No Projected Component Replacement Cost for Asset No. XX for 2024

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)		30	GAL	$1,681	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$15,132**	

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - RESIDENCE		11,750	SF	$87,565	2026
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		2,000	SF	$5,818	2026
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - RESIDENCE		11,750	SF	$2,234	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026

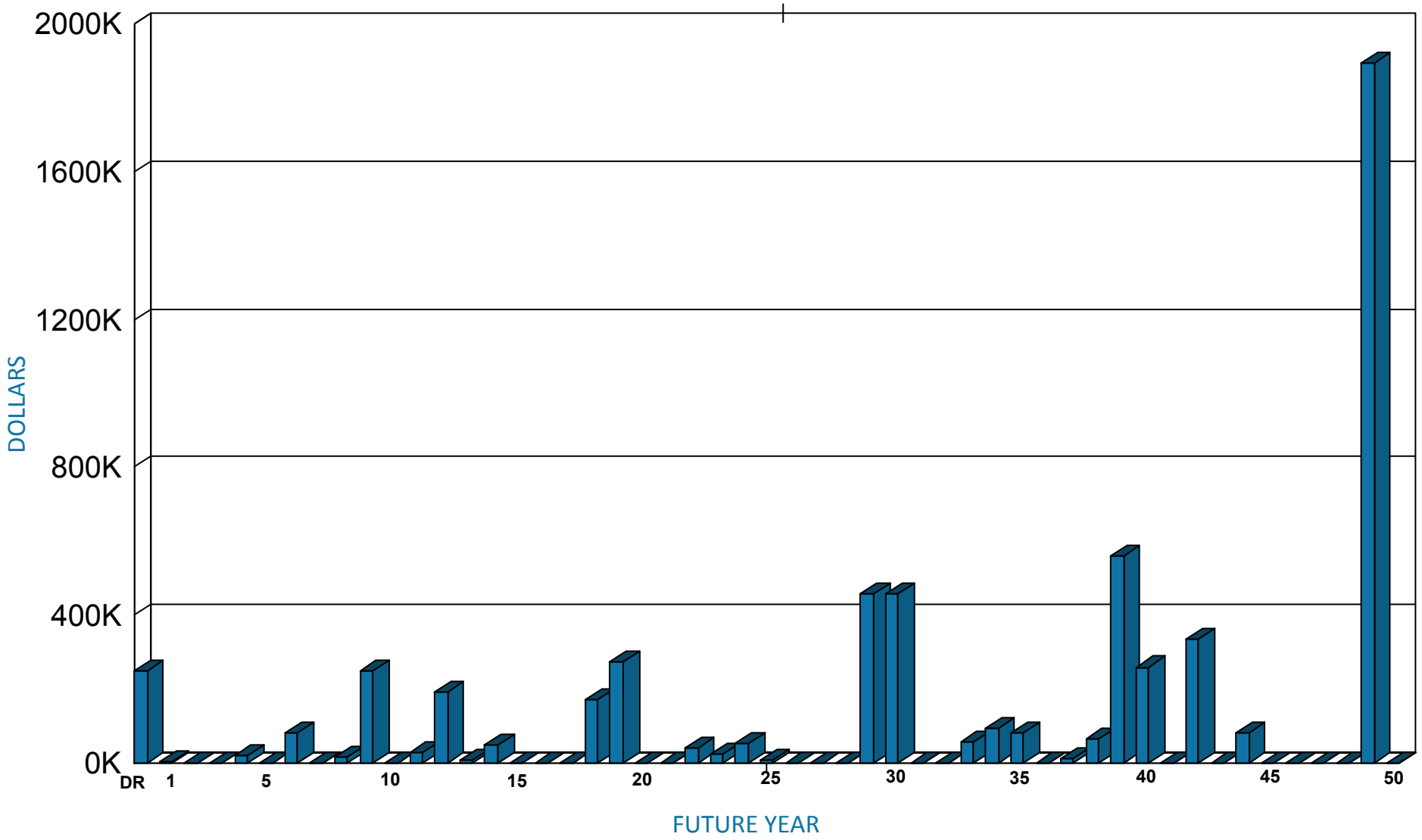
RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$345	2026
D2020	BACKFLOW PREVENTER (1-2 INCHES)	CONBRACO IND	1	EA	$2,831	2026
D2020	BACKFLOW PREVENTER (1-2 INCHES)	CONBRACO IND	1	EA	$2,831	2026
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	RELIANCE	40	GAL	$2,309	2026
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		3,950	SF	$87,268	2026
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		200	SF	$1,744	2026
G2040	VEHICLE GATE, SLIDING OR SWINGING, MOTORIZED		1	EA	$20,572	2026
D2010	PLUMBING FIXTURE - SINK, KITCHEN		9	EA	$8,808	2026
D2010	PLUMBING FIXTURE - BATHTUB WITH FIXTURES		9	EA	$18,617	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$243,705**	

No Projected Component Replacement Cost for Asset No. XX for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $3.97

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

NO CAD DRAWINGS ARE AVAILABLE FOR THIS BUILDING

SECTION 6

PHOTOGRAPHS

XX001a 9/14/2018

Exterior finishes and site

East elevation

XX001e 9/14/2018

Exterior lighting

South elevation

XX002a 9/14/2018

Main entrance

South elevation

XX002e 9/14/2018

Electrical meter

West elevation

XX003a 9/14/2018

Exterior finishes and site conditions

West elevation

XX003e 9/14/2018

Electrical meters

West elevation

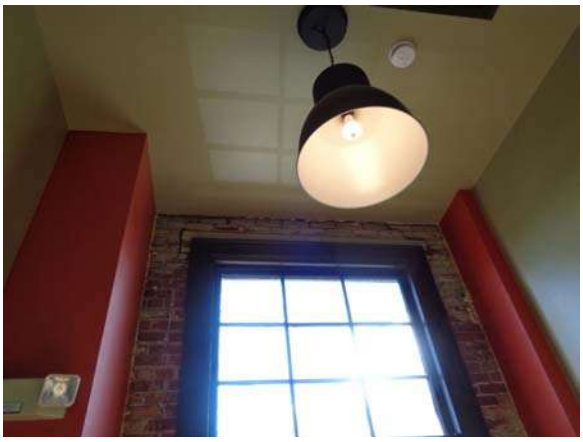
XX004a 9/14/2018
Exterior finishes and site conditions
West elevation

XX004e 9/14/2018
Panelboard
West elevation

XX005a 9/14/2018
South entrance stair with one handrail extension missing
South elevation

XX005e 9/14/2018
Exterior lighting
South elevation

XX006a 9/14/2018
South entrance door without compliant access
South elevation



XX006e 9/14/2018
Interior lighting
Second floor, corridor

XX007a 9/14/2018

Cellar doors

South elevation

XX007e 9/14/2018

Insulation

Second floor, ceiling

XX008a 9/14/2018

West entrance door without compliant access

West elevation

XX008e 9/14/2018

Insulation and drain piping

Second floor, ceiling

XX009a 9/14/2018

West entrance door with compliant handrails

West elevation

XX009e 9/14/2018

Furnace

Second floor, unit 4

XX010a 9/14/2018
Areaway windows at the lower rear apartment
West elevation

XX010e 9/14/2018
Interior lighting
Second floor, unit 4

XX011a 9/14/2018
Exterior finishes and site conditions
East elevation

XX011e 9/14/2018
Drain and supply piping
Second floor, unit 4

XX012a 9/14/2018
Exterior finishes and site conditions
North elevation

XX012e 9/14/2018
Smoke detector and interior lighting
Second floor, unit 4

XX013a 9/14/2018

Damaged concrete paving

South elevation

XX013e 9/14/2018

Drain and supply piping

Second floor, unit 4

XX014a 9/14/2018

Roof access and membrane

Roof

XX014e 9/14/2018

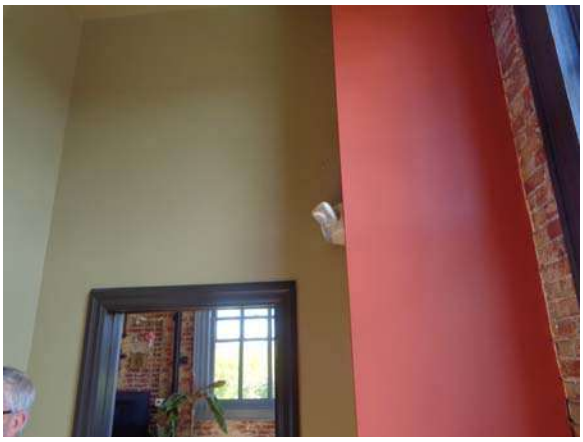
Odor fan/light fixture

Second floor, unit 4

XX015a 9/14/2018

Roof access without compliant ladder

Roof



XX015e 9/14/2018

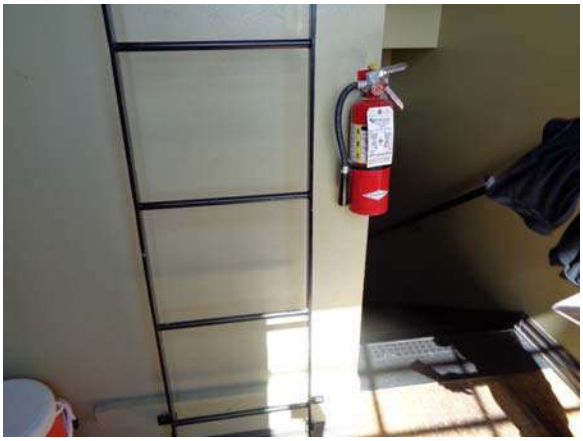
Emergency light

Second floor, corridor

XX016a 9/14/2018

Roof access with noncompliant ladder

Third floor corridor



XX016e 9/14/2018

Fire extinguisher

Third floor, corridor

XX017a 9/14/2018

Roof membrane and low parapets without fall protection

Roof

XX017e 9/14/2018

Backflow preventer

First floor, corridor

XX018a 9/14/2018

Roof membrane and low parapets without fall protection

Roof

XX018e 9/14/2018

Panelboard

First floor, corridor

XX019a 9/14/2018

Skylight and typical flashing

Roof

XX019e 9/14/2018

Water heater

First floor, corridor

XX020a 9/14/2018

Upper floor clerestory windows

Roof

XX020e 9/14/2018

Smoke detector and interior lighting

First floor, corridor

XX021a 9/14/2018

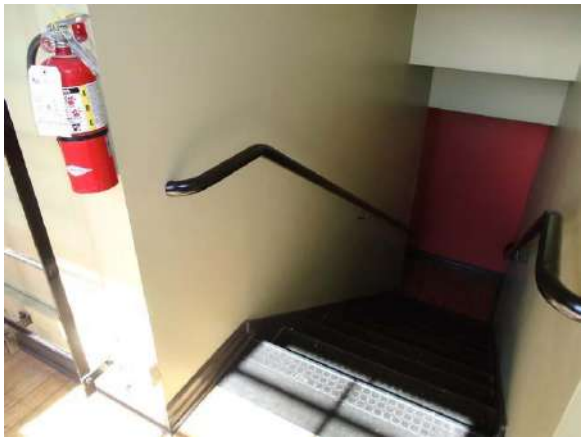
Roof drains with overflow scuppers

Roof

XX021e 9/14/2018

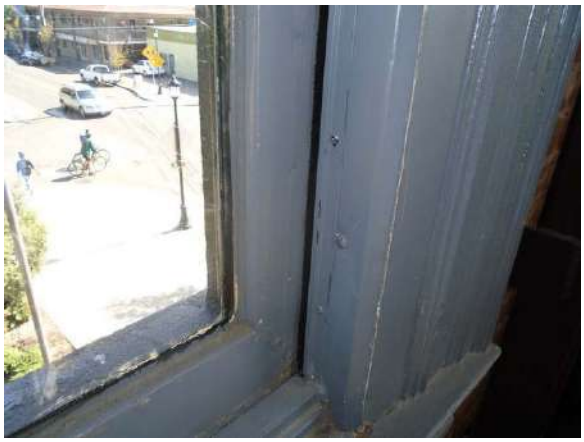
Water meters

First floor, corridor



XX022a 9/14/2018
Stair with compliant handrails
Third floor corridor

XX022e 9/14/2018
Backflow preventer
First floor, corridor



XX023a 9/14/2018
Detail at a typical window unit
Unit 4

XX023e 9/14/2018
Expansion tanks
First floor, corridor

XX024a 9/14/2018
Unit interior finishes and loft bedroom
Unit 4

XX024e 9/14/2018
Smoke detector and interior lighting
Second floor, corridor

XX025a 9/14/2018

Typical floor condition

Unit 4

XX025e 9/14/2018

Gas regulators

West elevation

XX026a 9/14/2018

Kitchen casework

Unit 4

XX026e 9/14/2018

Exterior lighting

Site

XX027a 9/14/2018

Casework and sink

Unit 4

XX027e 9/14/2018

Electrical meters

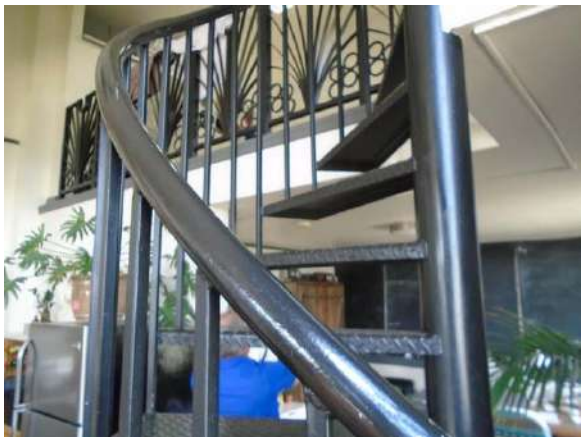
West elevation

XX028a 9/14/2018
Bathroom vanity and finishes
Unit 4

XX028e 9/14/2018
Exterior lighting
South elevation

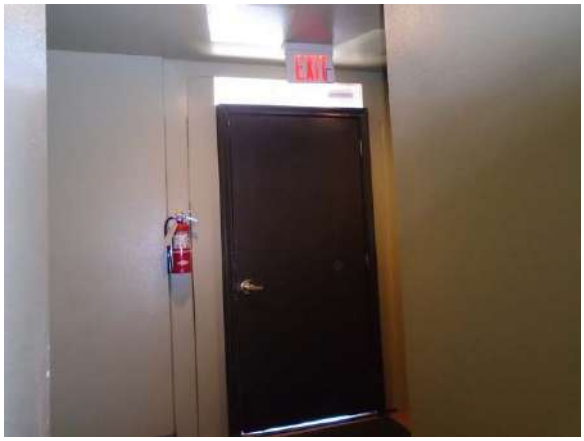
XX029a 9/14/2018
Shower enclosure and fixtures
Unit 4

XX029e 9/14/2018
Exterior lighting
West elevation

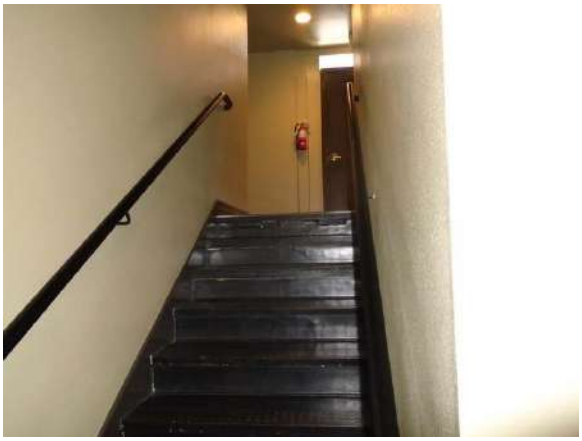


XX030a 9/14/2018
Detail at the stair to the sleeping loft
Unit 4

XX030e 9/14/2018
Exterior lighting
Site



XX031a 9/14/2018
Entrance door with illuminated exit sign
Second floor corridor



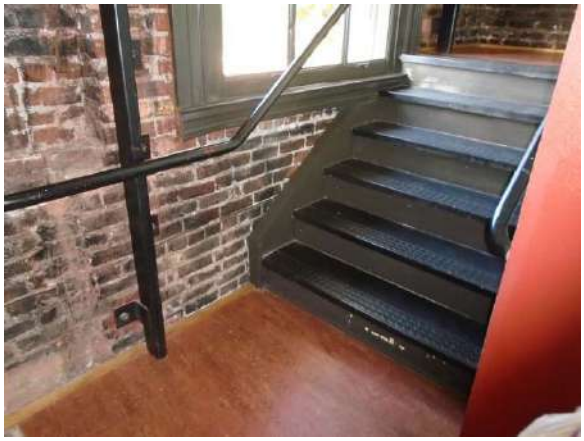
XX032a 9/14/2018
Stair with compliant handrails
First floor

XX033a 9/14/2018
Laundry room casework
First floor

XX034a 9/14/2018
Laundry room windows
First floor

XX035a 9/14/2018
Retailing wall typical condition
First floor

XX036a 9/14/2018
Areaway window at the laundry room
West elevation



XX037a 9/14/2018

Rear apartment stair and handrails

Second floor corridor, rear

XX038a 9/14/2018

Rear entrance stair handrail

West elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	XX
Asset Name	1011 N. Killingsworth Street, 9 Units
Year Built or Last Energy Renovation	1907

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

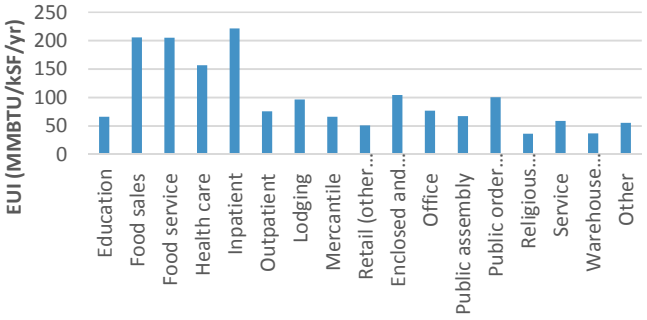
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Residential
Range of Years Constructed/Last Major Energy Renovation	Pre-1960
Benchmark EUI (MMBTU/kSF/yr) =	**96.5**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 67.6
Energy Efficient (consumes 10% to 30% less energy)	67.6 <= EUI <= 86.9
Similar (consumes within 10% less or 10% more energy)	86.9 < EUI < 106.2
Energy Inefficient (consumes 10% to 30% more energy)	106.2 <= EUI <= 125.5
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 125.5

Figure 1. EUIs for Buildings Constructed/Renovated Pre-1960

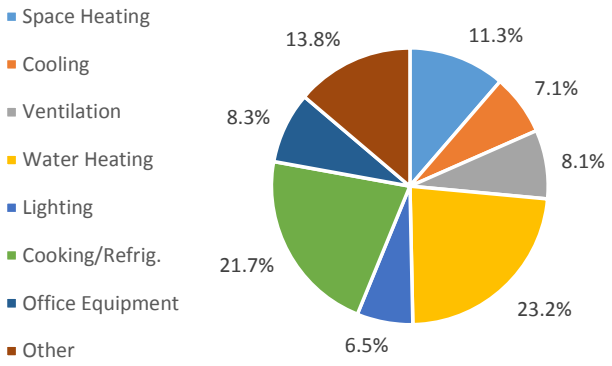


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: RESIDENTIAL	
Space Heating	11.3%
Cooling	7.1%
Ventilation	8.1%
Water Heating	23.2%
Lighting	6.5%
Cooking/Refrig.	21.7%
Office Equipment	8.3%
Other	13.8%
Total	100.0%

Figure 2. Energy End Use Profile: Residential



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - DHW Piping Insulation	INSULATE THE DOMESTIC HOT WATER PIPES. Insulating piping reduces heat loss, thereby reducing the amount of energy consumption.	LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

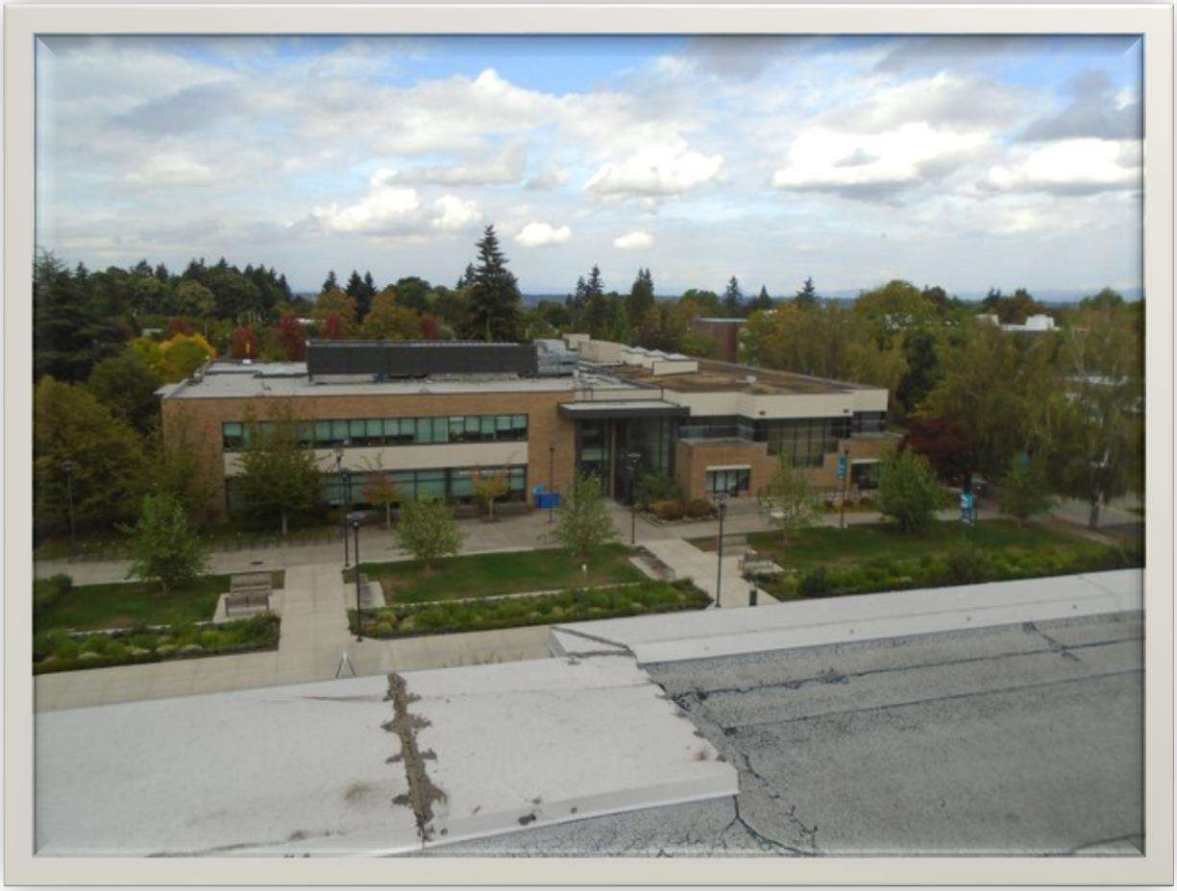
Cascade Campus

Facility Condition Assessment

Terrell Hall

Asset 2090

Inspected September 12, 2018



ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

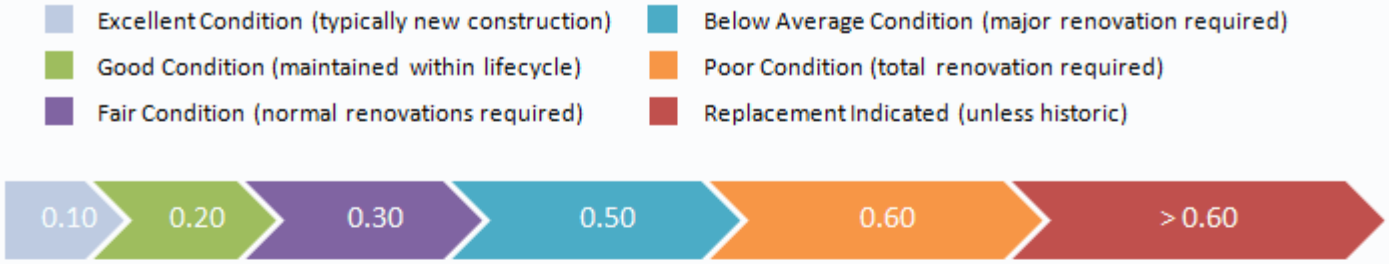
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

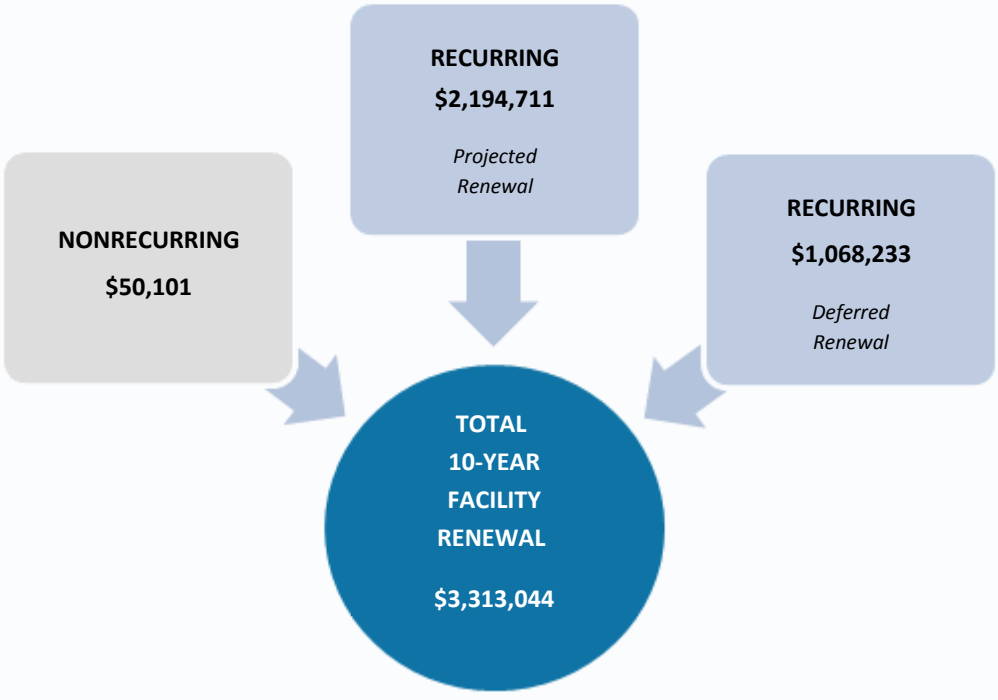
ASSET CODE	2090		
ASSET NAME	TERRELL HALL	**CURRENT REPLACEMENT VALUE**	$19,791,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.17
YEAR BUILT	1971	**FACILITY CONDITION INDEX**	0.05
GSF	48,192	**10-YEAR $/SF**	68.75
INSPECTION DATE	09/12/2018		

FCNI Scale

The FCNI for this asset is **0.17**



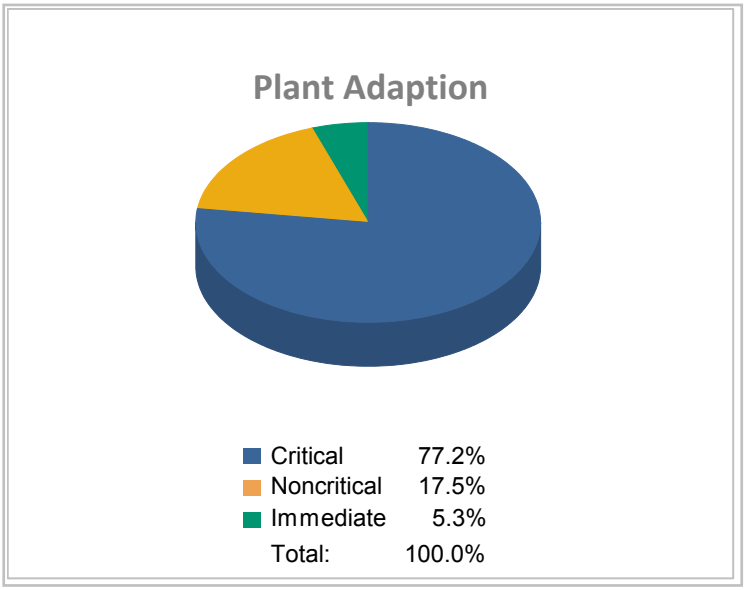
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

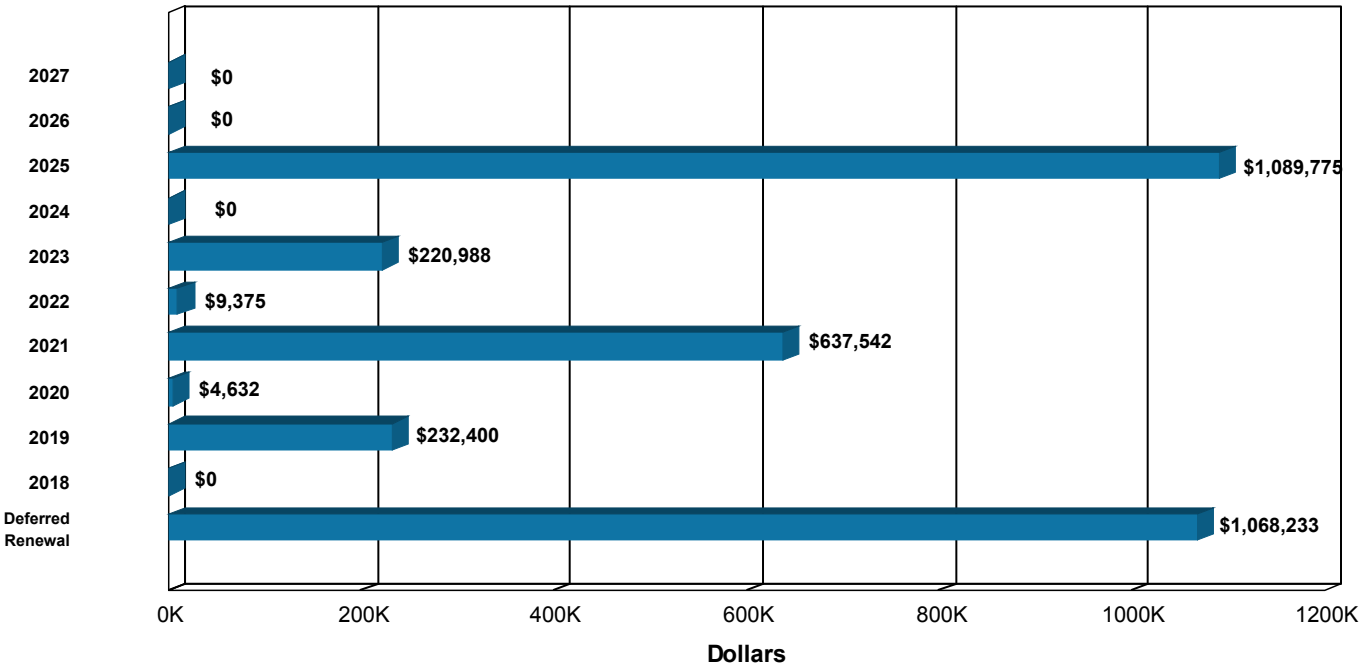
PLANT ADAPTION	
1 - Immediate	**$2,651**
2 - Critical	**$38,688**
3 - Noncritical	**$8,762**



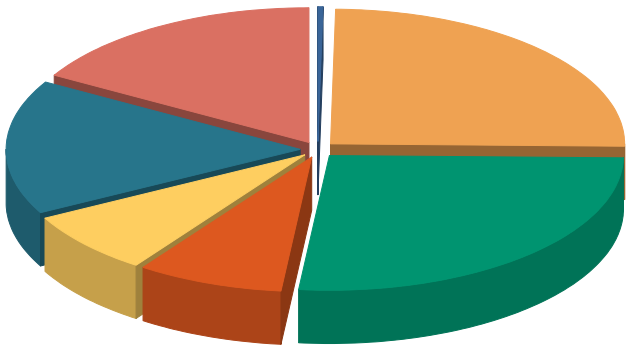
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$8,762	0%
Electrical	$832,326	25%
Exterior	$872,250	26%
Fire/Life Safety	$262,326	8%
Health	$0	0%
HVAC	$246,879	7%
Interiors	$534,442	16%
Plumbing	$556,058	17%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$3,313,044**	

ASSET SUMMARY

Terrell Hall is a two-story, 48,192 square foot facility constructed in 1971 on the Portland Community College, Cascade campus. The building was expanded in 1989 and partially renovated in 2005. It provides classrooms and study areas in addition to office space for faculty. The building also includes an 88-seat tiered auditorium.

Information for this report was gathered during a site visit conducted on September 12, 2018.

Site

Terrell Hall is on the west side of North Kerby Avenue and north of the Library. The site is flat and bounded on the east side by concrete pedestrian city sidewalks and on the other three sides by campus sidewalks. A large campus parking lot is just north of the building. A large concrete-paved plaza on the south side creates a plaza area between Terrell Hall and the Library. The site is heavily landscaped with lawns, ornamental planting, and mature trees. The landscaping is in good condition and no work is recommended at this time.

Exterior Structure

There are two separate roof systems, a gravel-ballasted, multi-ply asphaltic system on the 1989 portion of the building, and a granular-surfaced, asphaltic system on the remaining sections. Both of the roofing systems are in fair to poor condition and recommended for replacement in the next several years. Two types of skylights are installed on these roofs, the newer solar tube units are in good condition while the older dome type units are expected reach the end of their lifecycle soon and should be replaced. The exterior walls are brick veneer and painted stucco. The stucco varies in age and condition with the older areas in need of repair or refinishing and the newer areas in good condition. Windows are metal-framed units, some with insulating glass and others single glazed. The insulating glass systems should outlast the scope of this report, but replacement of the single-glazed units is recommended. The exterior doors are aluminum and glass storefront style and flush, hollow-metal units, all of which are in good condition.

Interior Finishes/Systems

Floor finishes include carpet, ceramic tile, and vinyl tile. While the ceramic tile floor finishes are in acceptable condition with no recommended work, the carpet and vinyl tile floors will reach the end of their expected lifecycle in the next ten years and should be replaced. The interior walls are painted or finished with ceramic tile. The tile should last beyond the scope of this report, but it is recommended that the painted walls be repainted within the next ten years. Ceilings are painted hard surfaces and suspended wood and acoustical tile systems, all of which are in good condition. The interior doors, the workroom and classroom casework, and the fixed seating in the auditorium are all in good condition and no work is recommended.

Accessibility

This building was constructed before accessibility legislation but was renovated in 2005 and substantially meets all current accessibility requirements. The entrances are at grade level and some have powered door openers. The elevator has a compliant control panel, accessible drinking fountains are available on the first floor, the door hardware and signage are compliant with accessibility standards, and the restrooms provide the required accessible features. The lower level of the auditorium has a wheelchair lift for full access to both levels. However, the second floor drinking fountains should be replaced with a dual-level unit or supplemented with a second unit at the correct height. The drinking fountain should also be protected by alcove walls or cane guards to prevent injury to visually impaired building occupants.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits is adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without restoring fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility a modern, Silent Knight fire alarm system. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes provide notification. The system appears to provide adequate coverage and is believed to date to 2005. Based on age, the system will reach the end of its service life within the report scope. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two air-cooled chillers provide cooling for the building. These units vary in age with one unit installed in 2005 and the other in 2015. They appear to be well maintained and have remaining service life beyond the scope of this report. Three rooftop air handling units (AHUs) provide heating (natural gas) and cooling. Distribution equipment consists of metal ductwork and cabinet unit heaters (CUH), and the controls are a digital application. A recently installed Trane rooftop package unit (RTU) supports the equipment. The RTU is charged with DX refrigerant and equipped with natural gas heat. The HVAC equipment appears to be in good condition and operating properly. However, a control upgrade should be anticipated over the scope of this report. Cooling is also provided by three split systems in select rooms. These units are charged with DX refrigerant and appear to be in good condition. The split systems have remaining service life with no recommendations.

Facility exhaust is provided by rooftop centrifugal fans and propeller type fans. The fans serve restrooms, mechanical spaces, and general exhaust needs. They are in adequate condition and were installed at different times. The original units have reached the end of their service life and should be replaced. Some of the other fans may need to be replaced toward the end of the next ten years. The 2015 unit should outlast the scope of this report.

Electrical

Power is supplied via underground utilities at 120/208 volts to a General Electric, 1,600 amp main switchboard in room 162. The original switchboard appears to be in adequate condition, but based on age it has reached lifecycle depletion and replacement is recommended.

The electrical distribution system consists of panelboards which distribute the 120/208 volt power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased. Most of the distribution equipment was upgraded in 2005 although there is still some original equipment in service. All of the remaining original equipment will reach lifecycle depletion within the scope of this report.

The interior lighting consists of suspended, surface-mount, and lay-in fixtures equipped with acrylic, parabolic, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be good condition and is estimated to have been replaced in 2005. Based on age, the system will reach the end of its normal service life toward the end of the next ten years and may need to be upgraded on a low priority basis.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted and bollard style fixtures on the site as well as from adjacent facilities. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, some of the exterior lighting may need to be scheduled for replacement due to lifecycle depletion.

Emergency power is provided by a district source with two automatic transfer switches providing the power for distribution. The emergency power equipment appears to be well maintained, is in good condition, and should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the supply fans and return fans for the rooftop AHUs. The VFDs are estimated to date to 2005 and will reach the end of their service life within the next few years.

Plumbing

Domestic water is supplied through a copper piping network and drain piping is cast-iron with no hub connections and some plastic applications. The piping systems, where they could be viewed, are in adequate condition. However, based on industry standards the supply piping will reach the end of its service life within the scope of this report.

Domestic hot water is provided by two residential-grade electric water heaters that have tank capacities of 30 gallons each. The water heaters were installed in 2010 and are in adequate condition. However, they will reach lifecycle depletion in the next ten years and should be considered for replacement.

A sump pump is believed to serve the elevator pit and is estimated to date to 2005. Based on age, it will reach the end of its service life within the scope of this report.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. The kitchen sink will reach the end of its anticipated lifecycle in the next ten years and is recommended for replacement. The remaining fixtures are all within their normal lifecycle and should last another ten or more years.

Vertical Transportation

This two-story facility has an Otis hydraulic passenger elevator installed in 2005. The unit has a car capacity of 3,500 pounds and is controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection. Additionally, there is a wheelchair lift in the tiered classroom. The 2014 unit is in excellent condition with no recommendations.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

September 12, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	8,762	0	0	0	0	0	0	0	0	0	0	0	$8,762
EXTERIOR	0	0	0	340,972	0	232,400	0	0	0	0	0	298,878	0	0	$872,250
INTERIOR	0	0	0	516,755	0	0	0	0	0	0	0	17,687	0	0	$534,442
PLUMBING	0	0	0	0	0	0	0	551,841	0	0	0	4,217	0	0	$556,058
HVAC	0	0	0	80,890	0	0	0	0	0	0	0	165,989	0	0	$246,879
FIRE/LIFE SAFETY	2,651	38,688	0	0	0	0	0	0	0	220,988	0	0	0	0	$262,326
ELECTRICAL	0	0	0	129,616	0	0	4,632	85,700	9,375	0	0	603,004	0	0	$832,326
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$2,651	$38,688	$8,762	$1,068,233	$0	$232,400	$4,632	$637,542	$9,375	$220,988	$0	$1,089,775	$0	$0	$3,313,044
TOTAL NONRECURRING PROJECT NEEDS			$50,101	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,262,944	

CURRENT REPLACEMENT VALUE	$19,791,000
FACILITY CONDITION NEEDS INDEX	0.17
FACILITY CONDITION INDEX	0.05

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
48,192	$3,313,044	$68.75

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$8,762	$0	$8,762
EXTERIOR	$0	$872,250	$872,250
INTERIOR	$0	$534,442	$534,442
PLUMBING	$0	$556,058	$556,058
HVAC	$0	$246,879	$246,879
FIRE/LIFE SAFETY	$41,339	$220,988	$262,326
ELECTRICAL	$0	$832,326	$832,326
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$50,101**	**$3,262,944**	**$3,313,044**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
2090FS02	FIRE RATING COMPROMISE	C1030	1	Plant Adaption	2,651
2090FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	38,688
2090AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	8,762
				TOTAL	**$50,101**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2090	WN05	GLASS, STOREFRONT	ORIGINAL			B2010	Deferred Renewal	276,724
2090	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	18,992
2090	RR23	ROOF SKYLIGHT - PLASTIC DOME				B3020	Deferred Renewal	45,256
2090	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	190,207
2090	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2005 INSTALL			C3020	Deferred Renewal	128,426
2090	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	1989 INSTALL			C3020	Deferred Renewal	156,899
2090	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL			C3020	Deferred Renewal	2,959
2090	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	1989 INSTALL			C3020	Deferred Renewal	38,265
2090	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000002934	ROOF	D3040	Deferred Renewal	3,773
2090	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000002938	ROOF	D3040	Deferred Renewal	3,773
2090	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)			ROOF	D3040	Deferred Renewal	3,773
2090	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	Deferred Renewal	45,431
2090	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	Deferred Renewal	24,140
2090	SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP	0000002800	162	D5010	Deferred Renewal	129,616
2090	EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE	1989			B2010	2019	5,658
2090	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	2019	226,741

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2090	VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-2 SF	0000002939	ROOF	D5010	2020	4,632
2090	PS02	SUPPLY PIPING SYSTEM - CLASSROOM				D2020	2021	551,841
2090	SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			D5010	2021	79,267
2090	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-1 RF	0000002948	ROOF	D5010	2021	6,433
2090	VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU-1 SF	0000002947	ROOF	D5010	2022	9,375
2090	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2023	207,131
2090	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	14406931	154	D4030	2023	13,857
2090	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			B2030	2025	27,081
2090	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			B2030	2025	40,622
2090	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				B3010	2025	231,175
2090	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2005 INSTALL			C3020	2025	17,687
2090	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2025	773
2090	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	0000002954	268	D2020	2025	1,367
2090	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	0000002787	JANITOR CLOSET	D2020	2025	1,367
2090	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			ELEV PIT	D2030	2025	710
2090	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)			154	D3040	2025	1,363

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2090	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)			260	D3040	2025	1,363
2090	BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				D3060	2025	163,264
2090	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	2025	4,630
2090	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2025	11,263
2090	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	2025	541,180
2090	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2025	45,931
							TOTAL	$3,262,944

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	2090FS02	FIRE RATING COMPROMISE	1	$2,651
2	2090FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$38,688
3	2090AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$8,762
		TOTAL FOR PLANT ADAPTION		**$50,101**
		GRAND TOTAL:		**$50,101**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	2090AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$8,762
				TOTAL FOR ACCESSIBILITY	**$8,762**
1	2090FS02	1	Plant Adaption	FIRE RATING COMPROMISE	$2,651
2	2090FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$38,688
				TOTAL FOR FIRE/LIFE SAFETY	**$41,339**
				GRAND TOTAL:	**$50,101**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

FIRE RATING COMPROMISE

Project Number:	2090FS02	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	9/12/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.1	Not Applicable	Undefined: Floor(s) 1,2
IBC	714.4		

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without restoring fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor firestopping	SF	24,000	$0.03	$720	$0.08	$1,920	$2,640
			Base Material/Labor Costs	**$720**		**$1,920**	
			Indexed Material/Labor Costs	**$716**		**$1,935**	**$2,651**
						No GCM Required	**$0**
						Original Construction Cost	**$2,651**
Date of Original Estimate: 9/12/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$2,651**
						No Professional Fees Required	**$0**
						TOTAL PROJECT COST	**$2,651**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	2090FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/17/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	35	$304	$10,640	$488	$17,080	$27,720
Base Material/Labor Costs				**$10,640**		**$17,080**	
Indexed Material/Labor Costs				**$10,576**		**$17,217**	**$27,793**
Construction Mark Up at 20.0%							**$5,559**
Original Construction Cost							**$33,351**
Date of Original Estimate: 12/17/2018						**Inflation**	**$0**
Current Year Construction Cost							**$33,351**
Professional Fees at 16.0%							**$5,336**
TOTAL PROJECT COST							**$38,688**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	2090AC01	**Category Code:** AC3F	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/17/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 2

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the second floor drinking fountain is a barrier to accessibility. The single-level drinking fountain should be replaced with a dual-level, refrigerated unit and protected by cane guards or alcove walls.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
Base Material/Labor Costs				**$2,481**		**$3,798**	
Indexed Material/Labor Costs				**$2,467**		**$3,828**	**$6,295**
Construction Mark Up at 20.0%							**$1,259**
Original Construction Cost							**$7,553**
Date of Original Estimate: 12/17/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,553**
Professional Fees at 16.0%							**$1,209**
TOTAL PROJECT COST							**$8,762**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE	2005			1,680	SF	1.12	$22,633	2005	30		2035
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE	1989			420	SF	1.12	$5,658	1989	30		2019
WN03	GLASS, CURTAIN WALL, STANDARD				2,100	SF	1.12	$398,038	2005	60		2065
WN05	GLASS, STOREFRONT	ORIGINAL			1,960	SF	1.12	$276,724	1971	40	6	DR
WN05	GLASS, STOREFRONT	1989 UPGRADE			1,470	SF	1.12	$207,543	1989	40		2029
WN05	GLASS, STOREFRONT	2005 UPGRADE			1,470	SF	1.12	$207,543	2005	40		2045
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				16	LEAF	1.00	$48,356	2005	25		2030
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				2	LEAF	1.00	$4,013	1989	40	2	2031
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			6	EA	1.00	$40,622	2005	20		2025
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			4	EA	1.00	$27,081	2005	20		2025
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	1.00	$1,893	2005	12	34	2051
DR36	DOOR PANIC HARDWARE, EXTERIOR				16	EA	1.00	$18,992	2005	12		DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP				13,255	SF	1.00	$231,175	2005	20		2025
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				10,845	SF	1.00	$226,741	1989	30		2019
RR23	ROOF SKYLIGHT - PLASTIC DOME				250	SF	1.00	$45,256	1989	20	8	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				24	SF	1.00	$6,868	2005	35		2040
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				37	LEAF	1.00	$81,823	2005	60		2065
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			32	LEAF	1.00	$117,393	2005	60		2065
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			26	LEAF	1.00	$95,382	2005	60		2065
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			37	EA	1.00	$27,857	2005	35		2040
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			32	EA	1.00	$24,093	2005	35		2040
DR26	DOOR PANIC HARDWARE, INTERIOR				26	EA	1.00	$30,861	2005	30		2035
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				80	LF	1.00	$44,871	2005	30		2035
SF01	SEATING, FIXED, FOLDING, STANDARD				88	EA	1.00	$31,031	2005	40		2045
IW01	WALL FINISH - APPLIED, STANDARD				68,150	SF	1.00	$190,207	2005	12		DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,390	SF	1.00	$56,297	1989	60		2049
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	1989 INSTALL			13,170	SF	1.00	$156,899	1989	12	16	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2005 INSTALL			10,780	SF	1.00	$128,426	2005	12		DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL			430	SF	1.00	$2,959	1971	20	26	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	1989 INSTALL			5,560	SF	1.00	$38,265	1989	20	8	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2005 INSTALL			2,570	SF	1.00	$17,687	2005	20		2025
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				1,710	SF	1.00	$60,306	1989	40		2029
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				27,370	SF	1.00	$304,633	2005	45		2050
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				5,130	SF	1.00	$14,318	2005	24		2029
IC07	CEILING FINISH - SUSPENDED ARCHITECTURAL				1,710	SF	1.00	$199,073	2005	60		2065
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	OTIS	0000004391	170	1	EA	1.00	$257,984	2005	25		2030
VT05	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)			122	1	EA	1.00	$35,936	2014	25		2039
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	1.00	$2,694	2005	25		2030
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				14	EA	1.00	$18,916	2005	35		2040
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	2005	20		2025
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	1.00	$3,329	2005	50		2055
FX10	PLUMBING FIXTURE - URINAL				5	EA	1.00	$5,393	2005	35		2040
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				12	EA	1.00	$20,340	2005	35		2040
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				48,192	SF	1.00	$551,841	1971	50		2021
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	0000002954	268	30	GAL	1.00	$1,367	2010	15		2025

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	0000002787	JANITOR CLOSET	30	GAL	1.00	$1,367	2010	15		2025
PD02	DRAIN PIPING SYSTEM - CLASSROOM				48,192	SF	1.00	$827,954	1971	60		2031
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			ELEV PIT	1	EA	1.00	$710	2005	20		2025
CH08	CHILLER - AIR COOLED PACKAGE (35-75 TONS)	MCQUAY	0000002927	ROOF	60	TON	1.00	$113,141	2005	30		2035
CH08	CHILLER - AIR COOLED PACKAGE (35-75 TONS)	DAIKEN	0000005432	ROOF	70	TON	1.00	$131,998	2015	30		2045
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004432	BLDG EXT	2	TON	1.00	$4,580	2010	25		2035
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	'0000006255	ROOF	1	TON	1.50	$3,435	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	'0000006256	ROOF	1	TON	1.00	$2,290	2015	25		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006312	IDF-1	1	TON	1.50	$4,455	2015	30		2045
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006313	IDF-2	1	TON	1.00	$2,970	2015	30		2045
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000004431	107	2	TON	1.00	$4,648	2010	30		2040
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	CUH	0000003502	C1-3	1	HP	0.50	$4,441	2005	35		2040
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	CUH	0000002976	C1-4	1	HP	0.50	$4,441	2005	35		2040
AH18	AIR HANDLING UNIT - OUTDOOR PACKAGE (5-8 HP)	AH-2	0000002930	ROOF	7	HP	1.00	$105,646	2005	25		2030
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AH-1	0000002928	ROOF	25	HP	1.00	$380,964	2005	25		2030

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	DAIKIN	0000005431	ROOF	25	HP	1.00	$380,964	2015	25		2040
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000002934	ROOF	1	EA	1.00	$3,773	1971	25	21	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000002938	ROOF	1	EA	1.00	$3,773	1971	25	21	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)			ROOF	1	EA	1.00	$3,773	1971	25	21	DR
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)			154	1	HP	0.50	$1,363	2005	20		2025
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)			WHEEL CH LIFT RM	1	HP	0.50	$1,363	2014	20		2034
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)			260	1	HP	0.50	$1,363	2005	20		2025
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				48,192	SF	1.00	$1,714,392	2005	45		2050
HU37	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (9-35 TON)	TRANE	0000006257	ROOF	7	TON	1.00	$47,496	2016	25		2041
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				48,192	SF	1.00	$163,264	2005	20		2025
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				48,192	SF	1.00	$45,431	2005	10	2	DR
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				48,192	SF	1.00	$24,140	2005	10	2	DR
FS01	FIRE SPRINKLER SYSTEM - WET				48,192	SF	1.00	$651,972	1971	80		2051
FA01	FIRE ALARM SYSTEM - DEVICES				48,192	SF	1.00	$207,131	2005	18		2023
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	14406931	154	1	EA	1.00	$13,857	2005	18		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		IDF-2	1	EA	1.00	$13,857	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			3,192	SF	1.00	$79,267	1971	50		2021
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	2005 UPGRADE			45,000	SF	1.00	$1,117,489	2005	50		2055
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP	0000002800	162	1,600	AMP	1.00	$129,616	1971	40	6	DR
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-2 SF	0000002939	ROOF	7	HP	1.00	$4,632	2005	15		2020
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-1 RF	0000002948	ROOF	15	HP	1.00	$6,433	2005	16		2021
VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU-1 SF	0000002947	ROOF	25	HP	1.00	$9,375	2005	17		2022
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			4	EA	1.00	$2,034	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			6	EA	1.00	$4,630	2005	20		2025
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			2	EA	1.00	$1,543	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			1	EA	1.00	$772	2015	20		2035
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	1	EA	1.00	$1,316	2010	20		2030
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	9	EA	1.00	$17,528	2005	40		2045
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	9	EA	1.00	$11,263	2005	20		2025
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				48,192	SF	1.00	$541,180	2005	20		2025

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				20,000	SF	1.00	$45,931	2005	20		2025
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	ATS-2E	0000005232	260	125	AMP	1.00	$3,412	2015	25		2040
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	ATS-2S	0000005233	162	125	AMP	1.00	$3,412	2015	25		2040
							Grand Total:	$11,140,871				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	GLASS, STOREFRONT	ORIGINAL	1,960	SF	$276,724	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		16	EA	$18,992	DR
B3020	ROOF SKYLIGHT - PLASTIC DOME		250	SF	$45,256	DR
C3010	WALL FINISH - APPLIED, STANDARD		68,150	SF	$190,207	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	1989 INSTALL	13,170	SF	$156,899	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2005 INSTALL	10,780	SF	$128,426	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL	430	SF	$2,959	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	1989 INSTALL	5,560	SF	$38,265	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		1	EA	$3,773	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		48,192	SF	$24,140	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		48,192	SF	$45,431	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP	1,600	AMP	$129,616	DR
				TOTAL DEFERRED RENEWAL COST	$1,068,233	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2090 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		10,845	SF	$233,544	2019
B2010	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE	1989	420	SF	$5,828	2019
2019	PROJECTED COMPONENT REPLACEMENT COST				$239,372	

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-2 SF	7	HP	$4,914	2020
2020	PROJECTED COMPONENT REPLACEMENT COST				$4,914	

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL	3,192	SF	$86,617	2021
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-1 RF	15	HP	$7,030	2021
D2020	SUPPLY PIPING SYSTEM - CLASSROOM		48,192	SF	$603,012	2021
2021	PROJECTED COMPONENT REPLACEMENT COST				$696,659	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU-1 SF	25	HP	$10,551	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$10,551	

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$16,064	2023
D4030	FIRE ALARM SYSTEM - DEVICES		48,192	SF	$240,121	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$256,185	

No Projected Component Replacement Cost for Asset No. 2090 for 2024

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		48,192	SF	$665,583	2025
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		20,000	SF	$56,489	2025
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	6	EA	$5,694	2025
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		9	EA	$13,852	2025
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM		48,192	SF	$200,794	2025

RECURRING COST BY YEAR

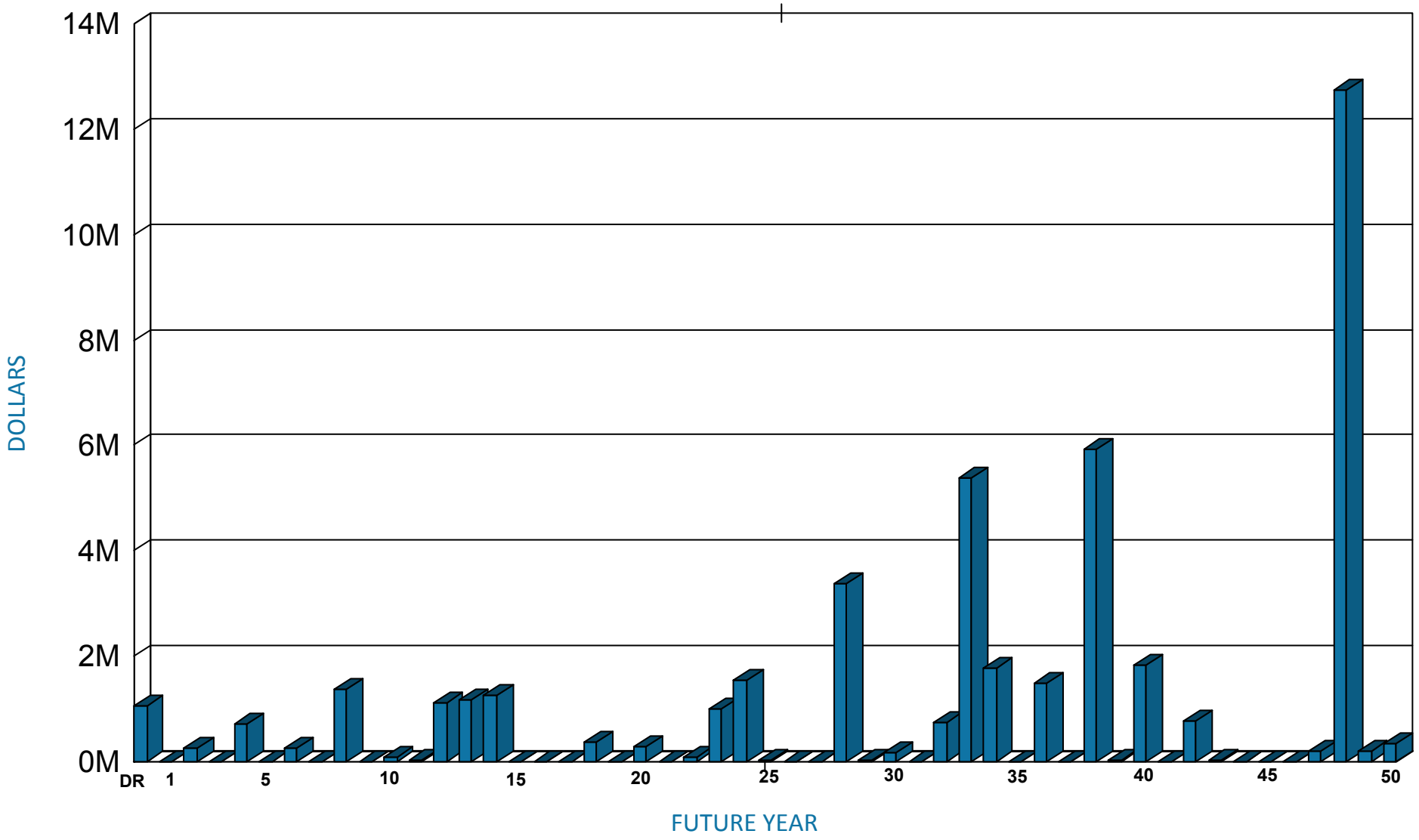
All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)		1	HP	$1,676	2025
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)		1	HP	$1,676	2025
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)		1	EA	$873	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	30	GAL	$1,681	2025
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	30	GAL	$1,681	2025
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		13,255	SF	$284,316	2025
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	2005 INSTALL	2,570	SF	$21,753	2025
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR	6	EA	$49,960	2025
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR	4	EA	$33,306	2025
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$950	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,340,286**	

No Projected Component Replacement Cost for Asset No. 2090 for 2026

No Projected Component Replacement Cost for Asset No. 2090 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.53

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

FS02

TERRELL
HALL

BLDG NO. 2090

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF

FS01

FS02

TERRELL HALL

BLDG NO. 2090

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

2090001a 9/12/2018

Accessible elevator control panel

Elevator

2090001e 9/12/2018

Car operating panel

Elevator cab

2090002a 9/12/2018

Roof membranes at the construction joint between phases

Roof

2090002e 9/12/2018

Condensing units

Roof

2090003a 9/12/2018

Roof access and typical flashing

Roof

2090003e 9/12/2018

Air-cooled chiller

Roof

2090004a 9/12/2018

Roof drain and overflow drain

Roof

2090004e 9/12/2018

Rooftop package unit

Roof

2090005a 9/12/2018

Roof edge without fall protection

Roof

2090005e 9/12/2018

Exhaust fan

Roof

2090006a 9/12/2018

Solar tube style skylight

Roof

2090006e 9/12/2018

Exhaust fan

Roof

2090007a 9/12/2018

Roof edge and lower roof access

Roof

2090007e 9/12/2018

Air-cooled chiller

Roof

2090008a 9/12/2018

Mechanical screen walls

Roof

2090008e 9/12/2018

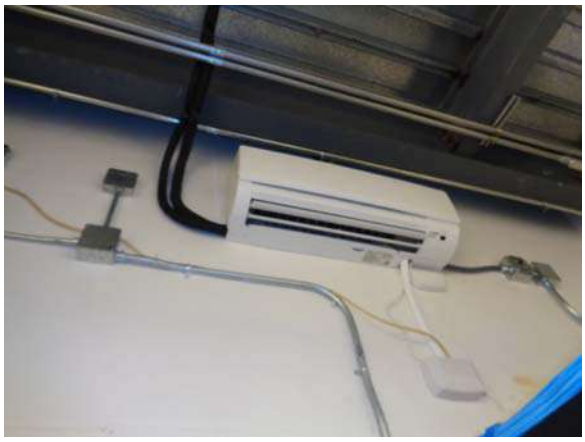
Exhaust fan

Roof

2090009a 9/12/2018

Roof of the 1989 addition

Roof



2090009e 9/12/2018

Evaporator

Second floor, room IDF21

2090010a 9/12/2018

Screen wall and skylights

Roof

2090010e 9/12/2018

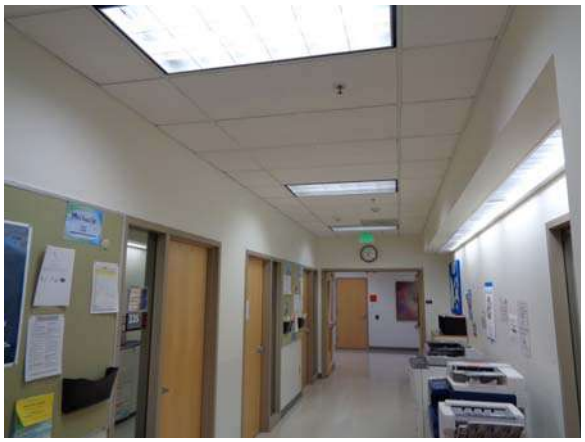
Interior lighting

Second floor, room 224

2090011a 9/12/2018

Stairwell curtain wall system

Stair S2-3



2090011e 9/12/2018

Interior lighting

Second floor, corridor

2090012a 9/12/2018

Stair with compliant railings

Stair S2-3

2090012e 9/12/2018

Interior lighting

Second floor, room 228

2090013a 9/12/2018

Door with compliant hardware and signage

Corridor C2-3

2090013e 9/12/2018

Panelboard

Second floor, room 260

2090014a 9/12/2018

Guardrail at the lobby

Corridor C2-3

2090014e 9/12/2018

ATS

Second floor, room 260

2090015a 9/12/2018

Typical corridor finishes

Corridor C2-5

2090015e 9/12/2018

Interior lighting

Second floor, room 200

2090016a 9/12/2018

Unfirestopped penetrations

Room IDF21

2090016e 9/12/2018

Drain and supply piping

Second floor, room 202

2090017a 9/12/2018

Typical office interior finishes

Room 237

2090017e 9/12/2018

Panelboard

Second floor, room 202

2090018a 9/12/2018

Detail at the glazing system

Room 224

2090018e 9/12/2018

Strobe and interior lighting

Second floor, men's restroom

2090019a 9/12/2018

Work area casework

Corridor C2-4

2090019e 9/12/2018

Interior lighting

Second floor, room 203

2090020a 9/12/2018

Typical classroom finishes

Room 200

2090020e 9/12/2018

Interior lighting

Second floor, room 203

2090021a 9/12/2018

Detail at the older glazing system

Room 200

2090021e 9/12/2018

Water heater

Second floor, room 268

2090022a 9/12/2018

Detail at the older glazing system

Room 200

2090022e 9/12/2018

Interior lighting

First floor, room 122

2090023a 9/12/2018

Casework and sink

Room 202

2090023e 9/12/2018

Interior lighting

First floor, room 122

2090024a 9/12/2018

Utility sink

Room 266

2090024e 9/12/2018

Interior lighting

First floor, room 112

2090025a 9/12/2018

Noncompliant drinking fountain

Corridor C2-8

2090025e 9/12/2018

Interior lighting

First floor, room 109

2090026a 9/12/2018

Lavatories and area finishes

Room T2-1

2090026e 9/12/2018

Switchboard

First floor, room 162

2090027a 9/12/2018

Urinal and water closet

Room T2-1

2090027e 9/12/2018

ATS

First floor, room 162

2090028a 9/12/2018
Accessible water closet and accessories
Room T2-2

2090028e 9/12/2018
Panelboard
First floor, room 162

2090029a 9/12/2018
Lavatories and finishes
Room T2-2

2090029e 9/12/2018
Transformer
First floor, room 162

2090030a 9/12/2018
Detail at the 1989 glazing system
Room 203

2090030e 9/12/2018
Water heater
First floor, room 160

2090031a 9/12/2018

Water stained ceiling tiles

Room 204

2090031e 9/12/2018

Panelboard

First floor, room 160

2090032a 9/12/2018

Water stained ceiling tiles

Room 204

2090032e 9/12/2018

Evaporator

First floor, room IDF2

2090033a 9/12/2018

Fire rating labels on typical rated doors

Room 268

2090033e 9/12/2018

Wheelock panel

First floor, room IDF2

2090034a 9/12/2018

Old and newer tile finishes

Room 268

2090034e 9/12/2018

Elevator machine and controller

First floor, room 170

2090035a 9/12/2018

Skylight

Corridor C2-2

2090035e 9/12/2018

Interior lighting

First floor, room 123

2090036a 9/12/2018

Corridor ceiling with skylights

Corridor C2-2

2090036e 9/12/2018

Fire alarm panels

First floor, room 154

2090037a 9/12/2018

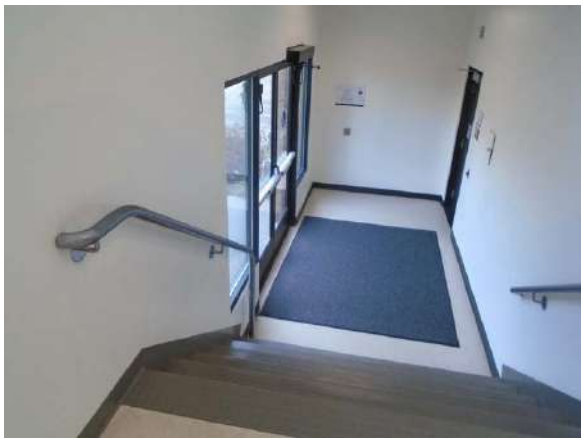
Atrium guardrails

Corridor C2-2

2090037e 9/12/2018

Panelboard

First floor, room 154



2090038a 9/12/2018

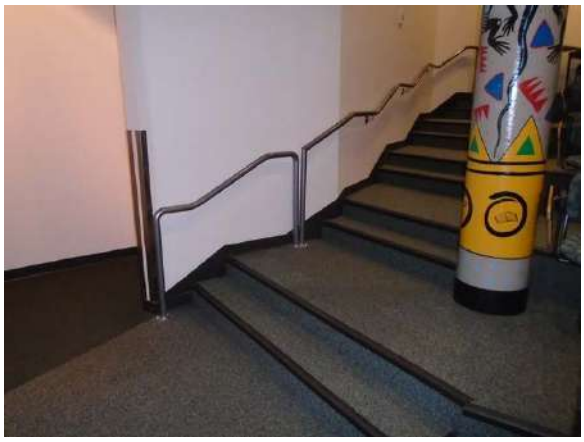
Stair to the auditorium lower level

Stair S1-2

2090038e 9/12/2018

Panelboards

First floor, room 154



2090039a 9/12/2018

Auditorium level changes with compliant handrails

Room 122

2090039e 9/12/2018

Exhaust fan

First floor, room 154

2090040a 9/12/2018

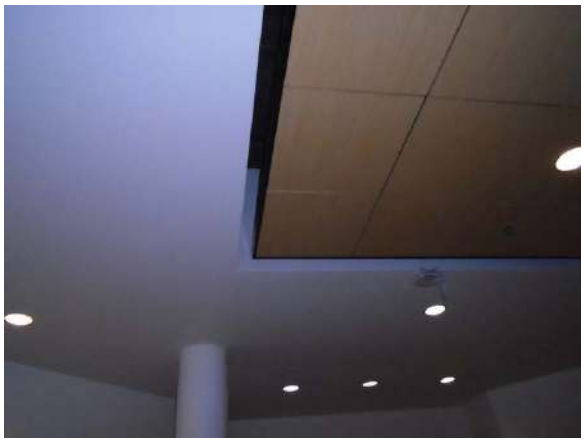
Fixed seating and finishes

Room 122

2090040e 9/12/2018

Interior lighting

First floor, room 124



2090041a 9/12/2018

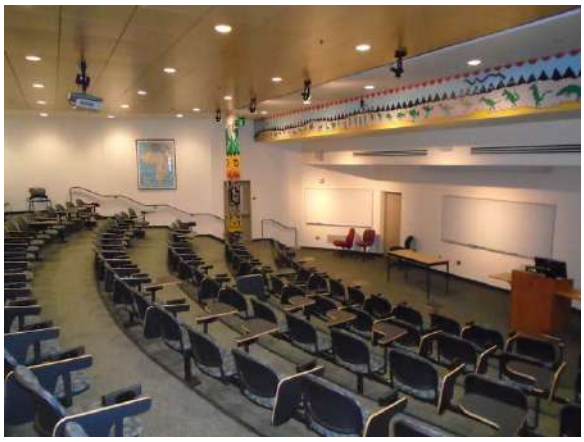
Ceiling in the auditorium

Room 122

2090041e 9/12/2018

Interior lighting

First floor, room 102



2090042a 9/12/2018

Fixed seating and finishes

Room 122

2090042e 9/12/2018

Exterior lighting

Site

2090043a 9/12/2018
Auditorium exit doors with hardware and signage
Room 122

2090043e 9/12/2018
Exterior lighting
Site

2090044a 9/12/2018
Exit doors, hardware, and signage
Corridor C1-2

2090044e 9/12/2018
Exterior lighting
East elevation

2090045a 9/12/2018
Lobby finishes
Corridor C1-1

2090045e 9/12/2018
Exterior lighting
Building exterior

2090046a 9/12/2018
Accessible drinking fountain
Corridor 1-1

2090046e 9/12/2018
Exterior lighting
Site

2090047a 9/12/2018
Restroom door with powered door opener
Corridor 1-1

2090047e 9/12/2018
Transformer
Site

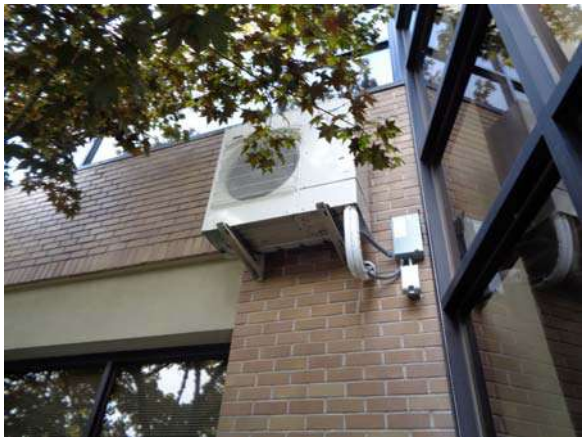
2090048a 9/12/2018
Lavatories and finishes
Room T1-1

2090048e 9/12/2018
Exterior lighting
North elevation

2090049a 9/12/2018

Urinals and finishes

Room T1-1



2090049e 9/12/2018

Condensing unit

North elevation

2090050a 9/12/2018

Atrium opening

Corridor C1-4

2090050e 9/12/2018

Exterior lighting

North elevation

2090051a 9/12/2018

Study area finishes

Room 123

2090051e 9/12/2018

Exterior lighting

Overhang

2090052a 9/12/2018

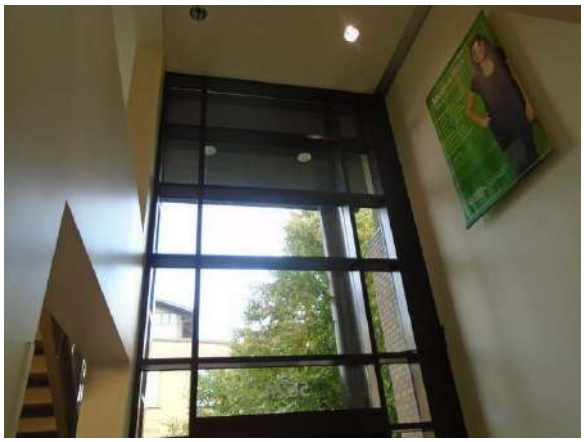
Stair with compliant railings

Stair S1-5

2090052e 9/12/2018

Exterior lighting

Building exterior



2090053a 9/12/2018

Curtain wall

Lobby C1-5

2090053e 9/12/2018

Exterior lighting

Building exterior

2090054a 9/12/2018

Auditorium steps with compliant handrails

South elevation

2090054e 9/12/2018

Exterior lighting

Site

2090055a 9/12/2018
Ramp to the auditorium exterior entrance
South elevation

2090056a 9/12/2018
Exterior finishes and site at the main entrance
South elevation

2090057a 9/12/2018
Exterior finishes and site at the main entrance
South elevation

2090058a 9/12/2018
Exterior finishes and site conditions
East elevation

2090059a 9/12/2018
Exterior finishes at the east entrance
East elevation

2090060a 9/12/2018
Exterior finishes and site conditions
North elevation

2090061a 9/12/2018

Exterior finishes at the north entrance

North elevation

2090062a 9/12/2018

Covered walkway at the north classrooms

North elevation

2090063a 9/12/2018

Classroom exit door and hardware

North elevation

2090064a 9/12/2018

Exterior finishes

South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2090
Asset Name	Terrell Hall
Year Built or Last Energy Renovation	1971

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

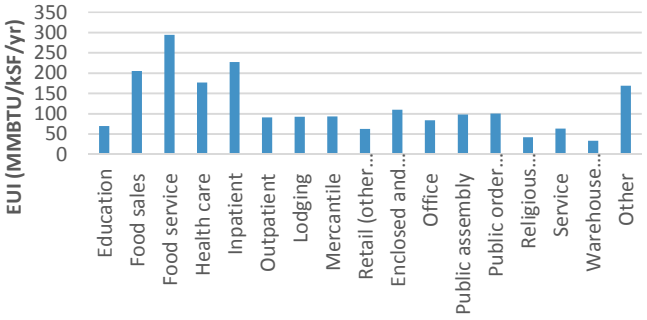
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

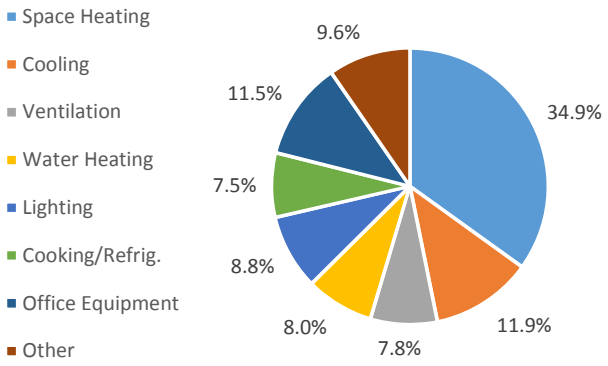


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

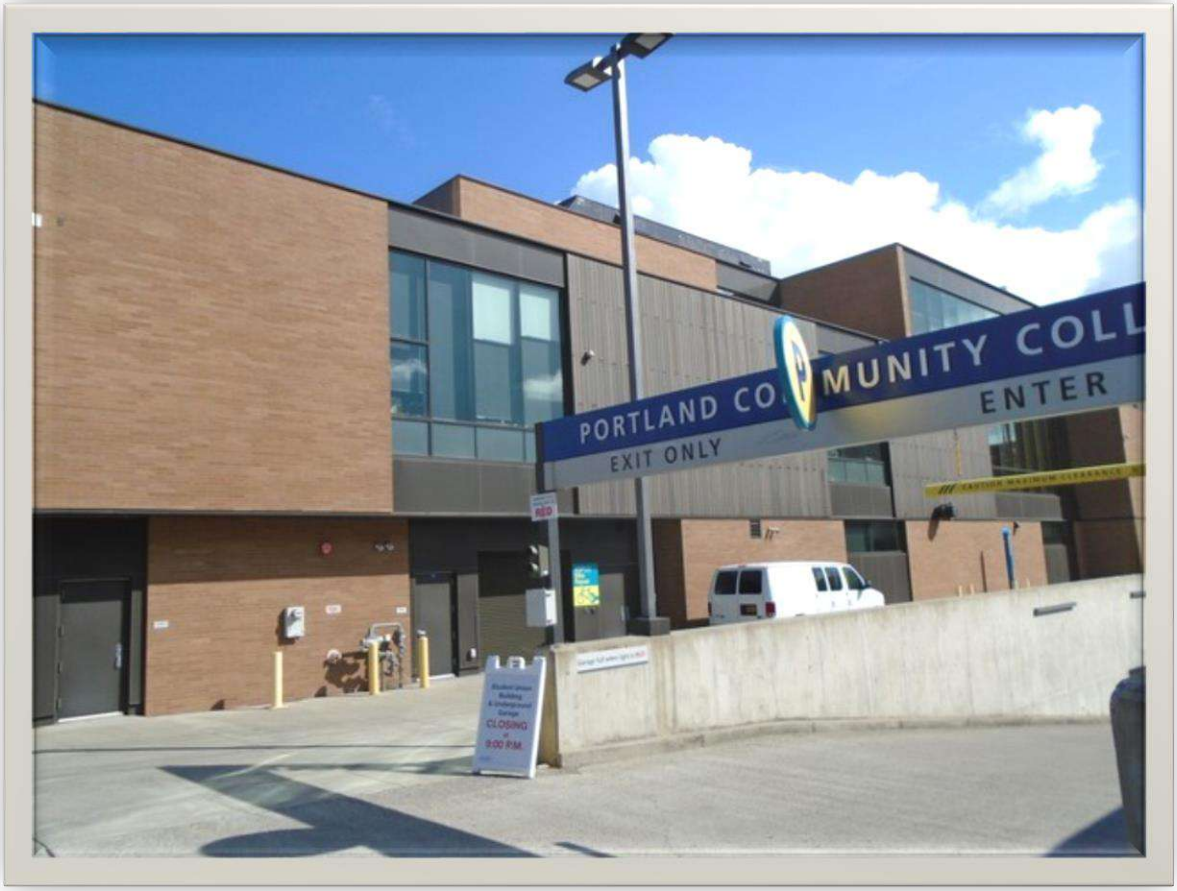
PORTLAND COMMUNITY COLLEGE

Cascade Campus

Facility Condition Assessment

Underground Parking
Asset 2120

Inspected September 12, 2018



ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

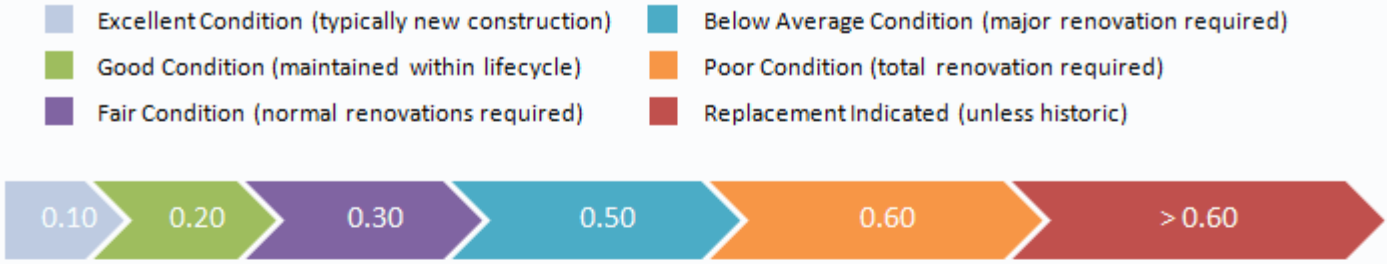
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

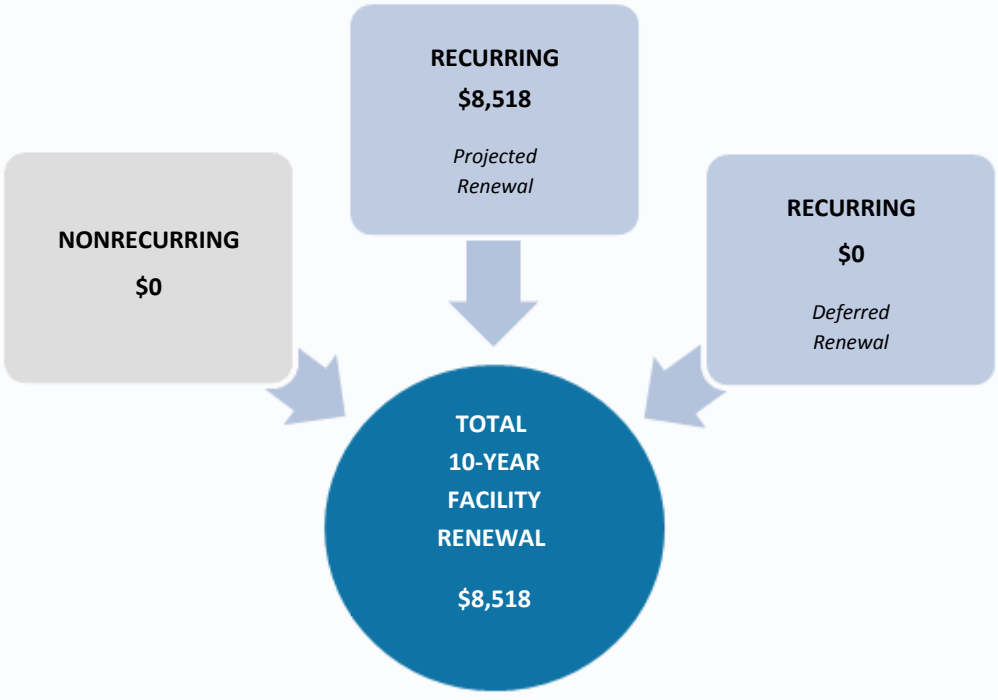
ASSET CODE	2120		
ASSET NAME	UNDERGROUND PARKING	**CURRENT REPLACEMENT VALUE**	$9,499,000
ASSET USE	Parking / Garage	**FACILITY CONDITION NEEDS INDEX**	0.00
YEAR BUILT	2014	**FACILITY CONDITION INDEX**	0.00
GSF	68,571	**10-YEAR $/SF**	0.12
INSPECTION DATE	09/12/2018		

FCNI Scale

The FCNI for this asset is **0.00**



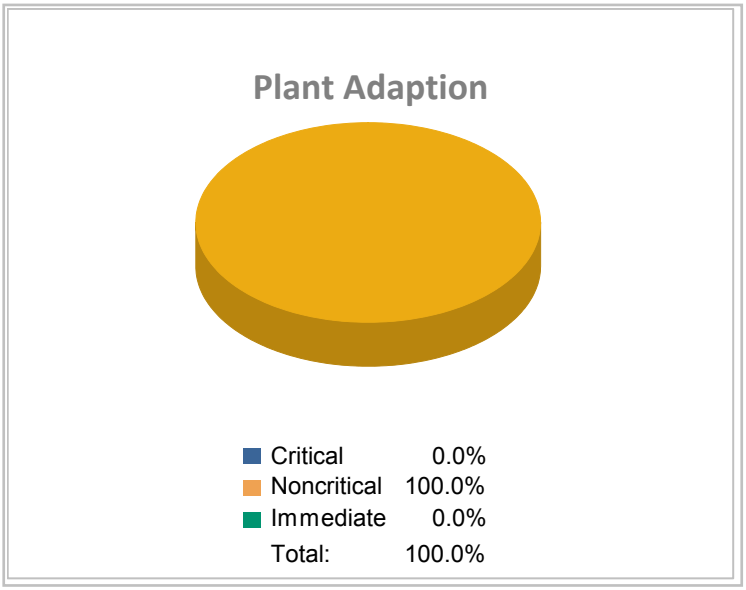
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

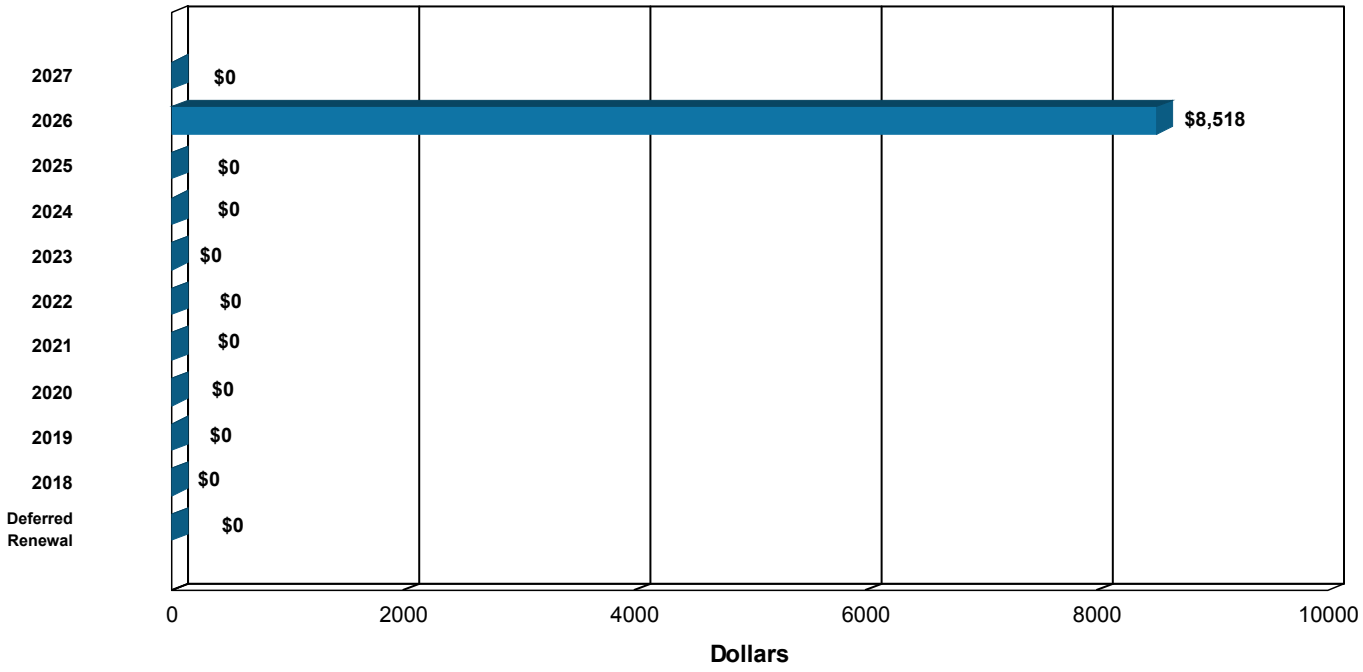
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**



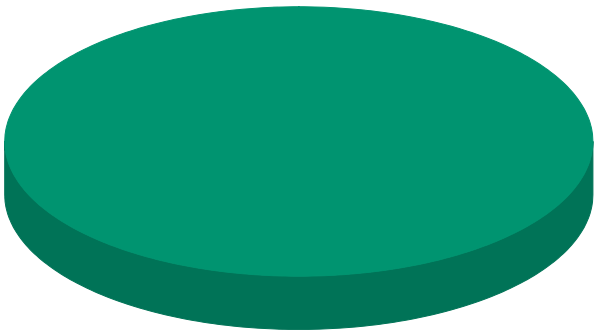
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$0	0%
Exterior	$8,518	100%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$0	0%
Interiors	$0	0%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$8,518**	

ASSET SUMMARY

The Underground Garage is a single-level parking facility on the Portland Community College, Cascade campus. The garage was constructed in 2014 along with Cascade Hall and the Student Union. It is located underneath Cascade Hall and the Student Union ground floors and is under the landscaped plaza area between those two buildings. The garage is 68,571 gross square feet in area and accommodates 211 cars, including 7 accessible spaces.

Information for this report was gathered during a site visit conducted on September 12, 2018.

Site

The garage is completely covered by two buildings and a plaza to the east of North Mississippi Avenue where the single vehicular entrance is located. Pedestrian access to the garage is by way of an elevator and stairway from the Student Union and a second stair from Cascade Hall. There are no site features other than the concrete paved entrance structure and road and no improvements to the site are recommended at this time.

Exterior Structure

The single exposed portion of the garage is the concrete retaining walls forming the vehicular entrance, all of which are in good condition. The area mall between Cascade Hall and the Student Union forms the roof of the portion of the garage not under either of the two buildings. There is no evidence of leaking through the roof in this area and no work is recommended on the garage roof. The doors to the enclosed spaces in the garage are all flush metal which are in good condition and should last another ten or more years. There is a small metal and glass parking kiosk at the lower level of the entrance to the garage which is in good condition and should not require any work in the next ten years.

Interior Finishes/Systems

The interior spaces are all unfinished utility areas which should not require any work during the scope of this report.

Accessibility

This garage was constructed subject to current accessibility legislation and includes accessible features such as accessible door hardware, a compliant elevator control panel (this elevator is addressed in the report for the Student Union Building), ADA-compliant handrails in the stairwells, and designated accessible parking spaces near the elevator. The utility area doors lack the required ADA-compliant signage which should be provided as part of routine maintenance.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

Exit access in this building is adequate and marked with illuminated exit signage. Emergency lighting is provided by twin-beam fixtures tied to the emergency power network. This is an adequate application with no recommendations.

The facility has a modern, Silent Knight fire alarm system with the main panel in an adjacent facility. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been recently upgraded with substantial remaining service life. A Wheelock mass notification panel is inventoried for information purposes.

The facility is provided fire suppression by an automatic sprinkler system. Additional fire suppression is provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

A new split system provides cooling to the IT room and is in good condition. Additionally, a cabinet unit heater serves a stairwell and receives heating hot water from the adjacent building. This HVAC equipment is in excellent condition with no recommendations. Facility exhaust is provided by a utility set type return fan and inline propeller fans for vehicle and general exhaust needs. The fans are new and in good condition with no recommendations.

Electrical

Power is supplied via the adjacent facility at 480/277 volts to a 400 amp main switchboard. Panelboards receive the power for distribution which is supplied directly or stepped down by transformers to 120/208 volts. Additional panelboards distribute the lower voltage power. Circuits are energized for mechanical, lighting, and general purpose loads. The electrical system appears to be in excellent condition and has remaining service life beyond the scope of this report.

The interior lighting consists of surface-mount fixtures equipped with acrylic or mesh screen lenses and lamped with T8 fluorescent bulbs. The interior lighting appears to be well maintained and in good condition. The system should continue to serve the facility over the next ten years. Exterior lighting was not observed as the facility is underground.

Emergency power is provided by a district source. An automatic transfer switch (ATS) provides the power for distribution. The ATS appears to be well maintained and in excellent condition. It should continue to serve the facility over the next ten years.

A variable frequency drive (VFD) controls motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The unit has service to the return fan and has substantial remaining service life.

Plumbing

Domestic water is supplied through a copper piping network serving an adjacent facility. Backflow preventers protect the water supply system to prevent cross contamination. Drain piping is cast-iron with no hub connections. The piping systems appear to be in good condition and no issues were reported. The piping equipment and backflow preventers have remaining service life beyond the scope of this report.

The facility houses a duplex sewage ejector that serves the building above and a simplex sump pump system serving the parking area. The equipment controls are only visible and appear to be well maintained. Based on age, the pump equipment has remaining service life beyond the scope of this report.

Vertical Transportation

The facility has a passenger elevator serving the main floor of this facility and three floors listed in the above facility. The equipment is inventoried in the above facility and there are no recommendations for this section of the report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
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carlm@isescorp.com

Date of Inspection

September 12, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	8,518	0	$8,518
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,518	$0	$8,518
TOTAL NONRECURRING PROJECT NEEDS			$0	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$8,518	

CURRENT REPLACEMENT VALUE	$9,499,000
FACILITY CONDITION NEEDS INDEX	0.00
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
68,571	$8,518	$0.12

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$0	$8,518	$8,518
INTERIOR	$0	$0	$0
PLUMBING	$0	$0	$0
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$0**	**$8,518**	**$8,518**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
	No projects are recommended.				

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
2120 DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2026	8,518
						TOTAL	**$8,518**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
		No projects are recommended.		

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
				No projects are recommended.	

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

NO PROJECTS ARE
RECOMMENDED FOR THIS
BUILDING AT THIS TIME

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				2,500	SF	1.00	$5,141	2014	30		2044
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				9	LEAF	1.00	$18,059	2014	40		2054
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				9	EA	1.00	$8,518	2014	12		2026
RR28	ROOF - APPLIED FINISH OVER CONCRETE STRUCTURE				36,000	SF	1.00	$278,133	2014	18		2032
BF01	BACKFLOW PREVENTER (<=1 INCH)			M0-05	1	EA	0.75	$755	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)			M0-04	1	EA	0.75	$755	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)			M0-02	1	EA	0.75	$755	2014	20		2034
BF03	BACKFLOW PREVENTER (2-3 INCHES)			M0-05	1	EA	1.00	$7,331	2014	20		2034
BF03	BACKFLOW PREVENTER (2-3 INCHES)			M0-04	1	EA	1.00	$7,331	2014	20		2034
BF03	BACKFLOW PREVENTER (2-3 INCHES)			M0-02	1	EA	1.00	$7,331	2014	20		2034
PS15	SUPPLY PIPING SYSTEM - PARKING STRUCTURE				68,571	SF	1.00	$109,459	2014	50		2064
PD15	DRAIN PIPING SYSTEM - PARKING STRUCTURE				68,571	SF	1.00	$163,036	2014	60		2074
PP03	SEWAGE LIFT STATION	WEIL		M0-02	10	HP	1.00	$28,499	2014	25		2039
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	WEIL		P-4	1	EA	1.00	$710	2014	20		2034
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	LG	0000004045	P-4	1	TON	1.00	$2,290	2014	25		2039

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	LG	0000004057	BDF0-01	1	TON	1.00	$2,970	2014	30		2044
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	CABINET HEATER		STAIR 3	1	HP	0.50	$4,441	2014	35		2049
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	COOK	0000004063	M0-01	15	HP	1.00	$29,431	2014	35		2049
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EUC-5	0000004058	BDF0-01	1	HP	1.00	$1,321	2014	35		2049
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	AMERICRAFT	0000004044	P-4	1	HP	1.00	$2,726	2014	20		2034
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	AMERICRAFT	0000004066	P-4	1	HP	1.00	$2,726	2014	20		2034
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	AMERICRAFT	0000004059	P-4	1	HP	1.00	$2,726	2014	20		2034
FS01	FIRE SPRINKLER SYSTEM - WET			E0-01	68,571	SF	1.00	$927,672	2014	80		2094
FA01	FIRE ALARM SYSTEM - DEVICES				68,571	SF	1.00	$294,720	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2014	18		2032
SE15	ELECTRICAL DISTRIBUTION NETWORK - PARKING STRUCTURE				68,571	SF	1.00	$421,530	2014	50		2064
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDP	0000004056	E0-01	400	AMP	1.00	$33,351	2014	40		2054
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	COOK	0000004065	M0-01	15	HP	1.00	$6,433	2014	16		2030
LI15	LIGHTING SYSTEM, INTERIOR - PARKING STRUCTURE				68,571	SF	1.00	$386,689	2014	20		2034
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	ZENITH	0000004052	E0-01	60	AMP	1.00	$5,220	2014	25		2039

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
							Grand Total:	$2,773,912				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2120 for DR

No Projected Component Replacement Cost for Asset No. 2120 for 2018

No Projected Component Replacement Cost for Asset No. 2120 for 2019

No Projected Component Replacement Cost for Asset No. 2120 for 2020

No Projected Component Replacement Cost for Asset No. 2120 for 2021

No Projected Component Replacement Cost for Asset No. 2120 for 2022

No Projected Component Replacement Cost for Asset No. 2120 for 2023

No Projected Component Replacement Cost for Asset No. 2120 for 2024

RECURRING COST BY YEAR

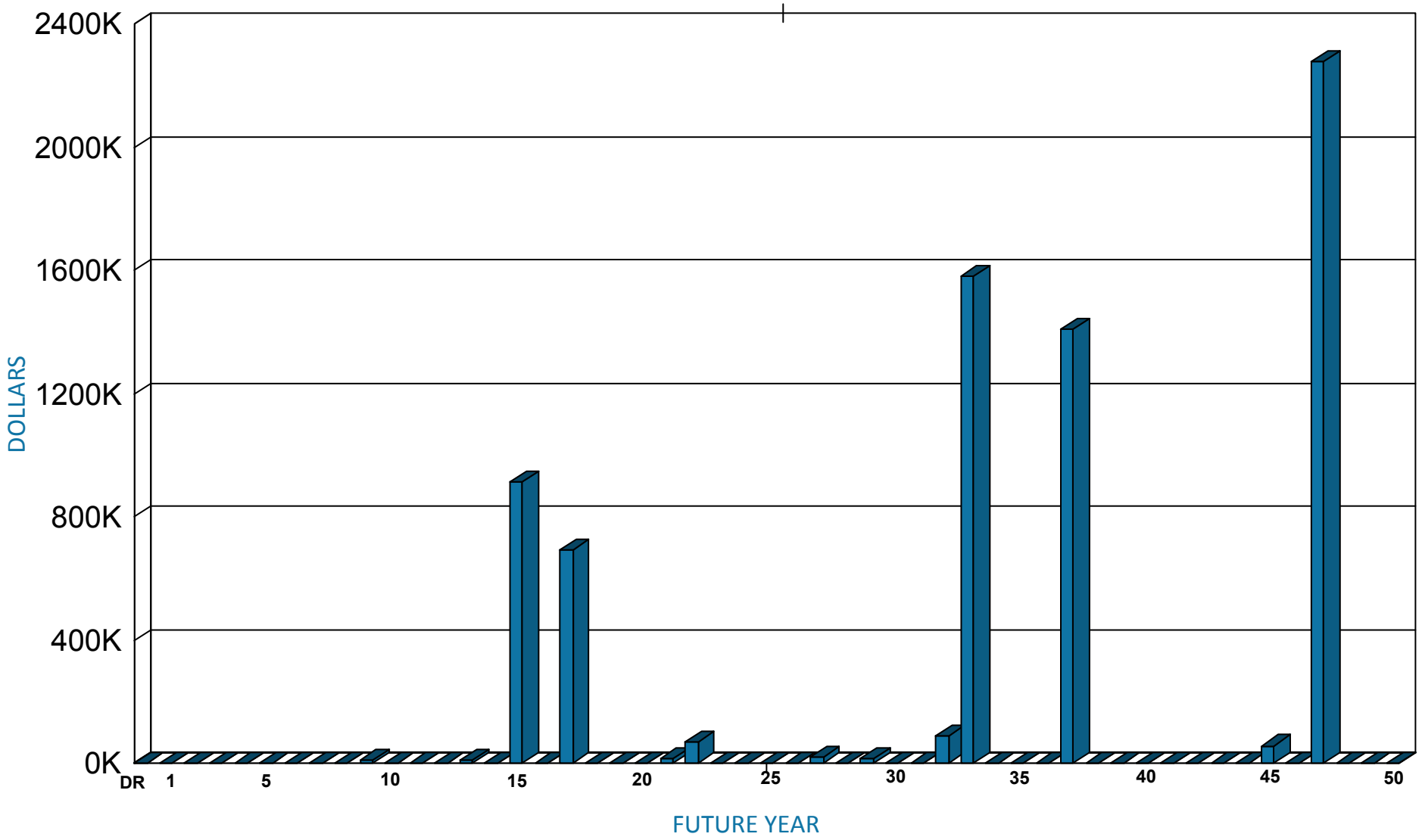
All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 2120 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		9	EA	$10,790	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$10,790	

No Projected Component Replacement Cost for Asset No. 2120 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



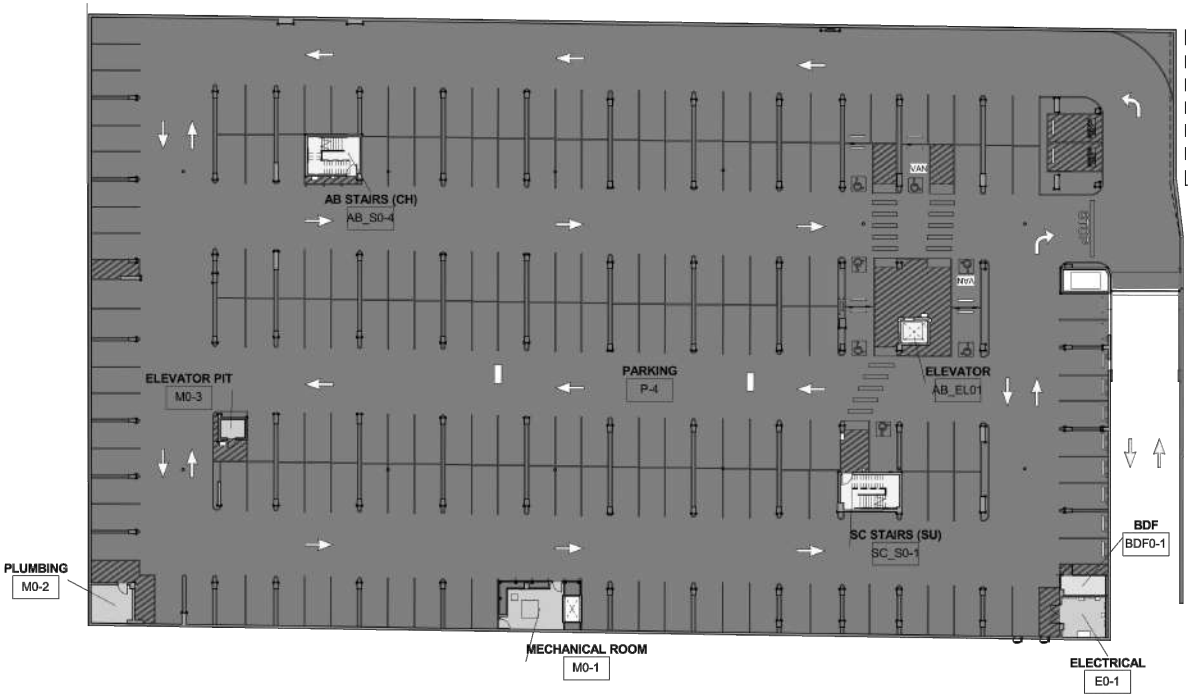
Average Annual Renewal Cost per SF $0.79

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



UNDERGROUND PARKING

BLDG NO. 2120

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/21/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 1

SECTION 6

PHOTOGRAPHS

2120001a 9/12/2018

Stair from the Student Union building

SC S0-1

2120001e 9/12/2018

Interior lighting

Stairwell

2120002a 9/12/2018

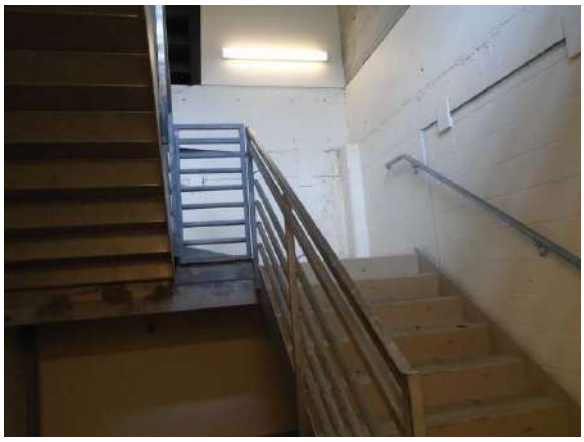
Compliant guardrails

SC S0-1

2120002e 9/12/2018

Fan coil unit

Stairwell



2120003a 9/12/2018

Compliant guardrails and handrails

SC S0-1

2120003e 9/12/2018

Backflow preventer

Room M0-5

2120004a 9/12/2018

Compliant handrails

SC S0-1

2120004e 9/12/2018

Interior lighting

Room M0-5

2120005a 9/12/2018

Garage interior

P-4

2120005e 9/12/2018

Unit heater and disconnect switch

Room M0-5

2120006a 9/12/2018

Stairwell in the garage, SC S0-1

P-4

2120006e 9/12/2018

Annunciator panel

Room P-4

2120007a 9/12/2018

Parking attendant booth

P-4

2120007e 9/12/2018

Switchboard

Room E0-1

2120008a 9/12/2018

Garage entrance ramp

South entrance

2120008e 9/12/2018

Panelboards and transformer

Room E0-1

2120009a 9/12/2018

Elevator

P-4

2120009e 9/12/2018

Automatic transfer switch

Room E0-1

2120010a 9/12/2018

Unfirestopped penetration

E-01

2120010e 9/12/2018

Panelboards

Room E0-1

2120011a 9/12/2018

Compliant room signage

BDF 0-1

2120011e 9/12/2018

Condensing unit

Room E0-1

2120012a 9/12/2018

Crosswalk markings at the elevator and accessible parking spaces

P-4

2120012e 9/12/2018

Exhaust fan

Room BDF0-1

2120013a 9/12/2018

Garage entrance ramp

South elevation

2120013e 9/12/2018

Evaporator

Room BDF0-1

2120014a 9/12/2018

Garage entrance at the Student Center

South elevation

2120014e 9/12/2018

Exhaust fan

Room P-4

2120015e 9/12/2018

Piping

Room P-4

2120016e 9/12/2018

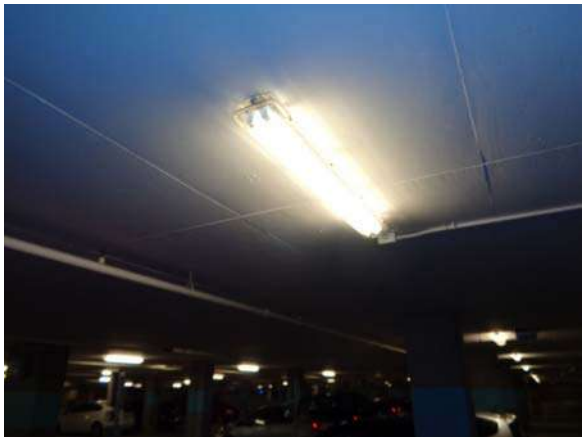
Piping

Room P-4

2120017e 9/12/2018

Sprinkler head

Room P-4



2120018e 9/12/2018

Interior lighting

Room P-4

2120019e 9/12/2018

Piping

Room P-4

2120020e 9/12/2018

Interior lighting

Room P-4

2120021e 9/12/2018

Fire extinguisher and pull station

Room P-4

2120022e 9/12/2018

Unit heater

Room M0-4

2120023e 9/12/2018

Piping

Room P-4

2120024e 9/12/2018

Unit heater

Room M0-2

2120025e 9/12/2018

Backflow preventer

Room M0-2

2120026e 9/12/2018

Sprinkler piping

Room M0-2

2120027e 9/12/2018

Sump pump controller

Room M0-2

2120028e 9/12/2018

Backflow preventer

Room M0-2

2120029e 9/12/2018

Exhaust fan

Room M0-1

2120030e 9/12/2018

VFD

Room M0-1

2120031e 9/12/2018

Exhaust fan

Room P-4

2120032e 9/12/2018

Strobe

Room P-4

2120033e 9/12/2018

Smoke detector

Room P-4

2120034e 9/12/2018

Piping

Room P-4

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	2120
Asset Name	Underground Parking
Year Built or Last Energy Renovation	2014

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

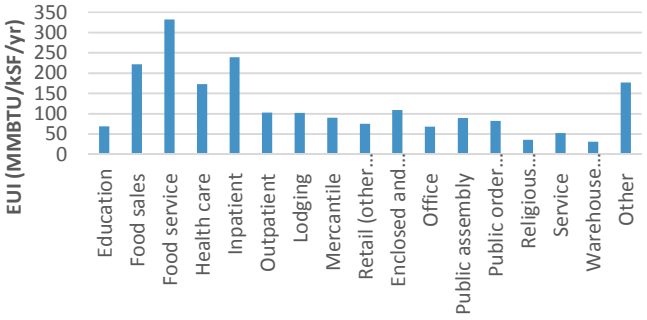
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Parking Structure
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**31.3**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 21.9
Energy Efficient (consumes 10% to 30% less energy)	21.9 <= EUI <= 28.2
Similar (consumes within 10% less or 10% more energy)	28.2 < EUI < 34.4
Energy Inefficient (consumes 10% to 30% more energy)	34.4 <= EUI <= 40.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 40.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

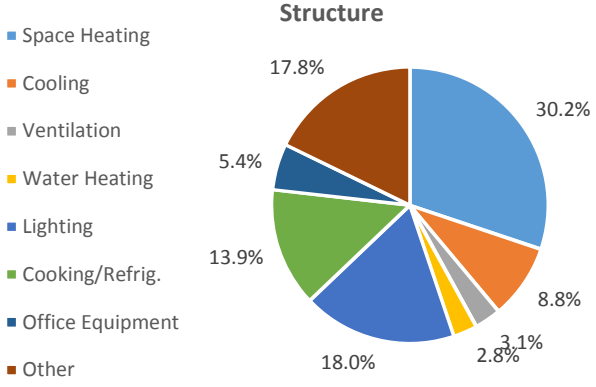


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: PARKING STRUCTURE	
Space Heating	30.2%
Cooling	8.8%
Ventilation	3.1%
Water Heating	2.8%
Lighting	18.0%
Cooking/Refrig.	13.9%
Office Equipment	5.4%
Other	17.8%
Total	100.0%

Figure 2. Energy End Use Profile: Parking Structure



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	There are no ECM recommendations for this building	

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Big Barn
Asset 3120

Inspected August 29, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

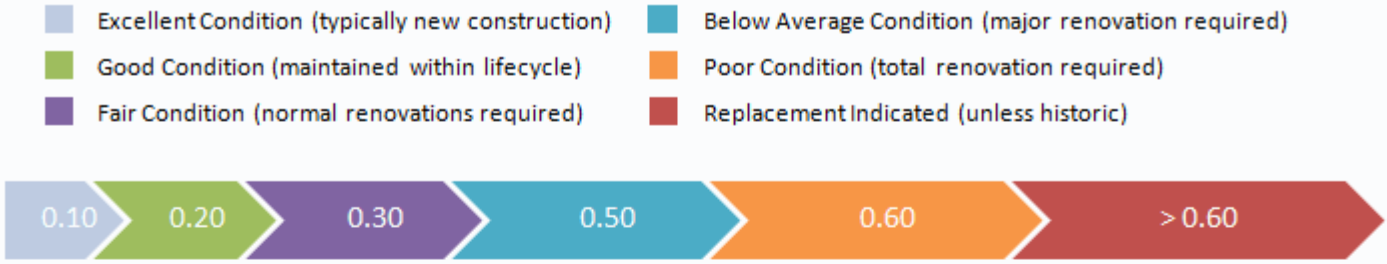
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

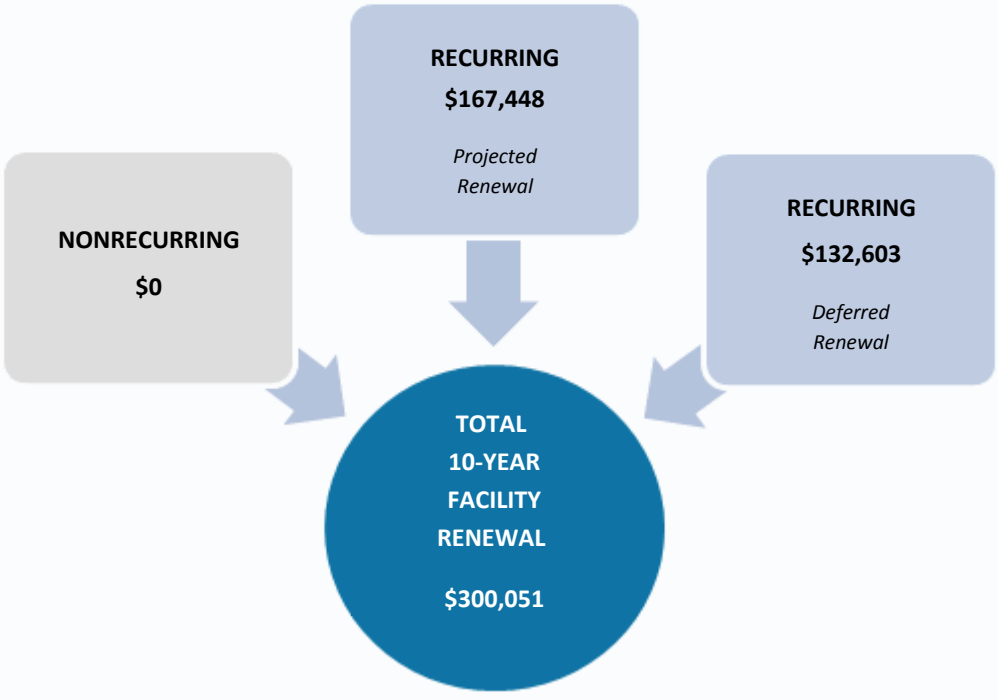
ASSET CODE	3120		
ASSET NAME	BIG BARN	**CURRENT REPLACEMENT VALUE**	$751,000
ASSET USE	Warehouse/Storage/Utility	**FACILITY CONDITION NEEDS INDEX**	0.40
YEAR BUILT	1980	**FACILITY CONDITION INDEX**	0.18
GSF	8,000	**10-YEAR $/SF**	37.51
INSPECTION DATE	08/29/2018		

FCNI Scale

The FCNI for this asset is **0.40**



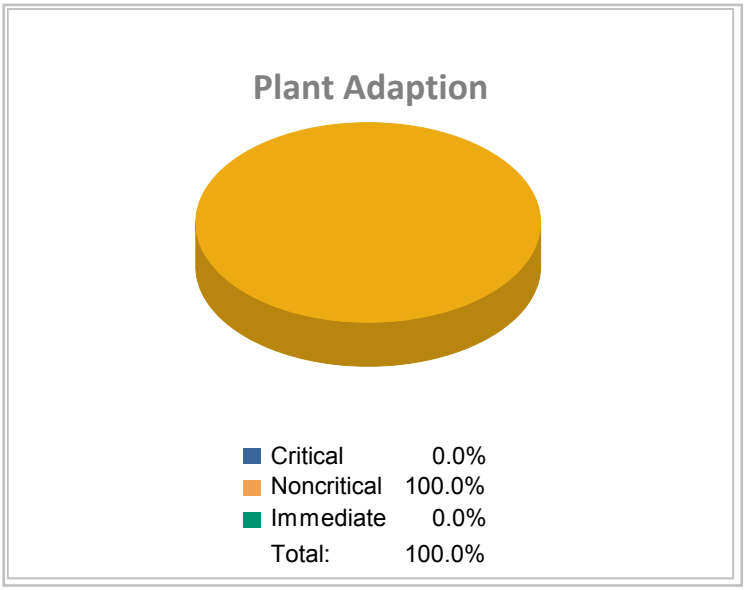
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

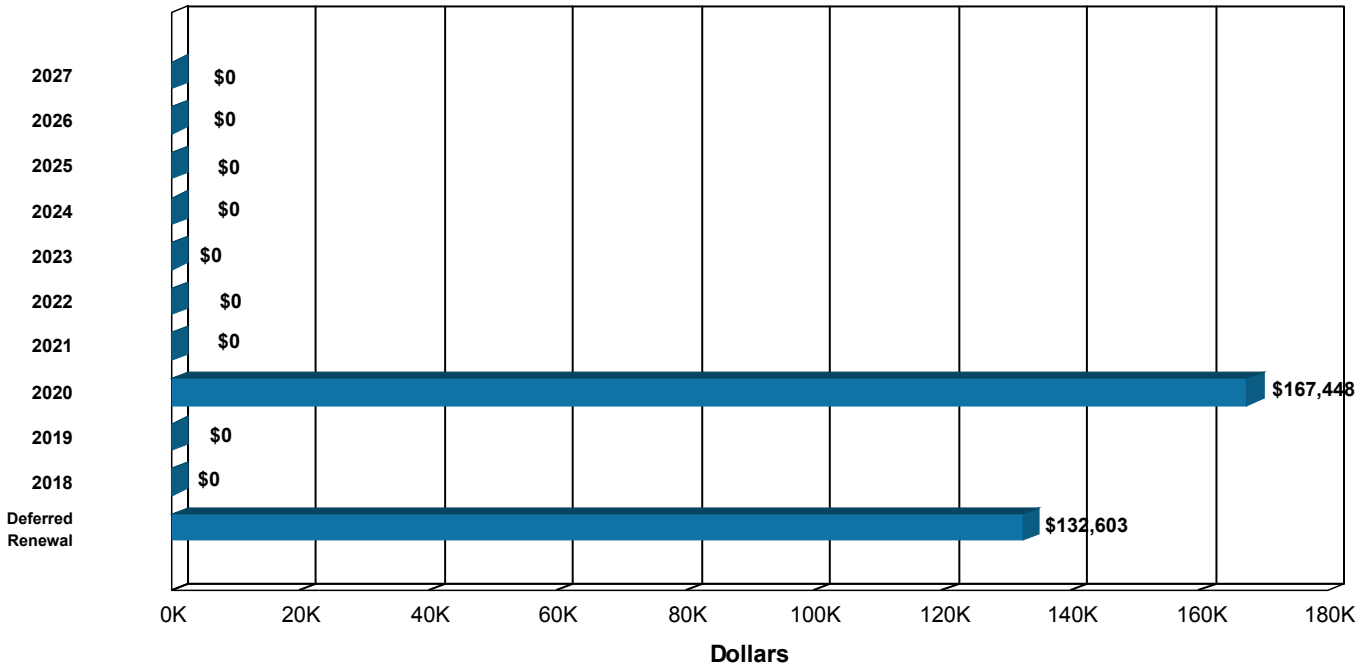
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**



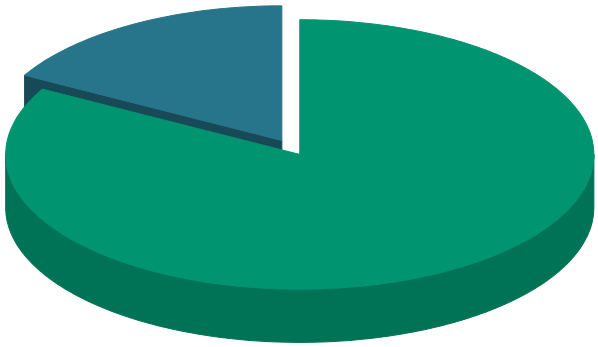
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$0	0%
Exterior	$249,099	83%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$0	0%
Interiors	$50,952	17%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$300,051**	

ASSET SUMMARY

Located to the west of the main Portland Community College, Rock Creek campus, the Big Barn lies among several agriculture buildings and serves as the main livestock housing unit for the college's farm animals. At 8,000 square feet, the structure is a typical wood and metal barn with metal roof. Reportedly constructed in 1980, most of the finishes are original to construction. As part of a 2008 Bond Program, the West Campus saw several new buildings added between 2008 through 2016 along with upgrades to existing buildings starting in 2010.

Information for this report was gathered during an on-site visit conducted on August 29, 2018.

Site

Located west of the Rock Creek campus, the facility lies among open range and pasture land. The area immediately surrounding the building is either fenced pasture or dirt and gravel drives. These exterior surfaces are in adequate condition and no site upgrades are recommended at this time.

Exterior Structure

The metal roof was not accessible on the day of inspection. Reportedly original to construction, this standing seam metal roof should be scheduled for replacement during the scope of this report. The gutter systems were replaced in 2016 and are in excellent condition with no required projects. The metal and wood panel walls have had minor repair over the years but are predominately original. It is recommended that these walls be replaced in the near future.

Interior Finishes/Systems

The interior floors are equally split between concrete and dirt. The concrete floors are in adequate condition but should be resealed to resist future deterioration.

Accessibility

Due to the use of this facility, handicapped accessibility is not necessary or recommended at this time.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and designation, and no exiting obstructions were noted or reported. This building is not protected by a local fire alarm system and none is recommended. There are manual fire extinguishers in the barn.

HVAC

There are no HVAC systems in this barn and none are required.

Electrical

The primary electrical equipment includes a 100 amp, residential-type panelboard and associated wiring for lighting and electrical outlets etc. The system appears to be in good condition and adequately sized for current building use. Suspended T8 fixtures illuminate interior spaces and wall-mounted HIDs illuminate portions of the perimeter. No upgrades are anticipated over the next ten years.

Plumbing

Supply and drain piping is limited for this type of facility. Where observable, supply, vent, and stormwater piping is galvanized, PVC, and cast-iron construction. No issues with the piping were observed or reported, and this type of construction is relatively long-lived.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 29, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	0	0	81,651	0	0	167,448	0	0	0	0	0	0	0	$249,099
INTERIOR	0	0	0	50,952	0	0	0	0	0	0	0	0	0	0	$50,952
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$0	$0	$132,603	$0	$0	$167,448	$0	$0	$0	$0	$0	$0	$0	$300,051
TOTAL NONRECURRING PROJECT NEEDS			$0	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$300,051	

CURRENT REPLACEMENT VALUE	$751,000
FACILITY CONDITION NEEDS INDEX	0.40
FACILITY CONDITION INDEX	0.18

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
8,000	$300,051	$37.51

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$0	$249,099	$249,099
INTERIOR	$0	$50,952	$50,952
PLUMBING	$0	$0	$0
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$0**	**$300,051**	**$300,051**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
	No projects are recommended				
				TOTAL	$0

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3120	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				B2010	Deferred Renewal	17,959
3120	EW08	WALL, EXTERIOR, SIDING, T-111 PLYWOOD				B2010	Deferred Renewal	63,692
3120	EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	37,136
3120	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			UPPER LEVEL	C3020	Deferred Renewal	13,816
3120	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED METAL			B3010	2020	167,448
							TOTAL	**$300,051**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
		No projects are recommended		

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
				No projects are recommended	

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

NO PROJECTS ARE
RECOMMENDED FOR THIS
BUILDING AT THIS TIME

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				1,320	SF	$17,959	1980	30	7	DR
EW08	WALL, EXTERIOR, SIDING, T-111 PLYWOOD				5,280	SF	$63,692	1980	25	12	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED METAL			9,800	SF	$167,448	1980	40		2020
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED				490	LF	$9,354	2016	20		2036
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD				6,600	SF	$37,136	1980	12	25	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			UPPER LEVEL	3,950	SF	$13,816	1980	10	27	DR
PS23	SUPPLY PIPING SYSTEM - WAREHOUSE	THROUGHOUT			8,000	SF	$2,150	1980	50		2030
PD23	DRAIN PIPING SYSTEM - WAREHOUSE	THROUGHOUT			8,000	SF	$3,231	1980	60		2040
SE23	ELECTRICAL DISTRIBUTION NETWORK - WAREHOUSE	THROUGHOUT			8,000	SF	$24,902	1992	50		2042
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)				2	EA	$1,543	2010	20		2030
LI23	LIGHTING SYSTEM, INTERIOR - WAREHOUSE	THROUGHOUT			8,000	SF	$11,428	2010	20		2030
						Grand Total:	**$352,658**				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED		1,320	SF	$17,959	DR
B2010	WALL, EXTERIOR, SIDING, T-111 PLYWOOD		5,280	SF	$63,692	DR
C3010	EXTERIOR WALL FINISH - APPLIED, STANDARD		6,600	SF	$37,136	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		3,950	SF	$13,816	DR
				TOTAL DEFERRED RENEWAL COST	$132,603	

No Projected Component Replacement Cost for Asset No. 3120 for 2018

No Projected Component Replacement Cost for Asset No. 3120 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED METAL	9,800	SF	$177,646	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$177,646	

No Projected Component Replacement Cost for Asset No. 3120 for 2021

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 3120 for 2022

No Projected Component Replacement Cost for Asset No. 3120 for 2023

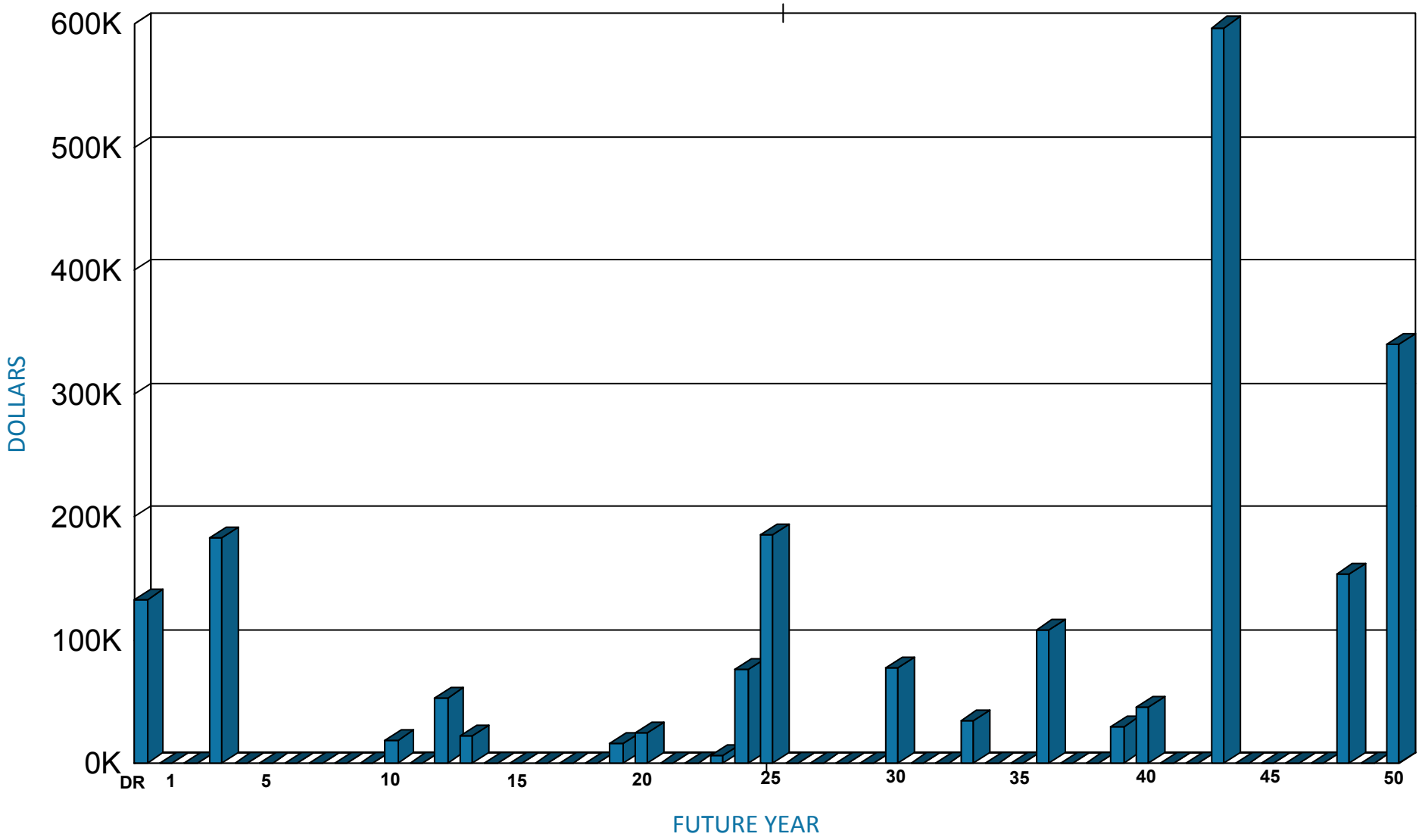
No Projected Component Replacement Cost for Asset No. 3120 for 2024

No Projected Component Replacement Cost for Asset No. 3120 for 2025

No Projected Component Replacement Cost for Asset No. 3120 for 2026

No Projected Component Replacement Cost for Asset No. 3120 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $2.22

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

NO CAD DRAWINGS ARE AVAILABLE FOR THIS BUILDING

SECTION 6

PHOTOGRAPHS

3120001a 8/29/2018
Exterior wood siding
Southwest corner

3120001e 8/29/2018
T8 open-cell light fixtures
Throughout

3120002a 8/29/2018
Dirt floors and unfinished interior
Lower level

3120002e 8/29/2018
Recently updated residential main electrical panelboard
West interior wall

3120003a 8/29/2018
Concrete floor and unfinished interior
Upper level

3120003e 8/29/2018
Supply piping and hose for animal shelters
East interior wall

3120004a 8/29/2018

Exterior finishes

Northeast corner

3120004e 8/29/2018

One of two wall-mounted HID light fixtures

East and west exterior walls

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3120
Asset Name	Big Barn
Year Built or Last Energy Renovation	1980

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

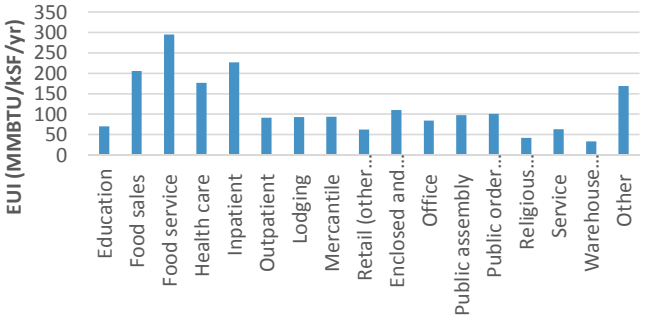
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Warehouse/Storage
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**33.2**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 23.2
Energy Efficient (consumes 10% to 30% less energy)	23.2 <= EUI <= 29.9
Similar (consumes within 10% less or 10% more energy)	29.9 < EUI < 36.5
Energy Inefficient (consumes 10% to 30% more energy)	36.5 <= EUI <= 43.2
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 43.2

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

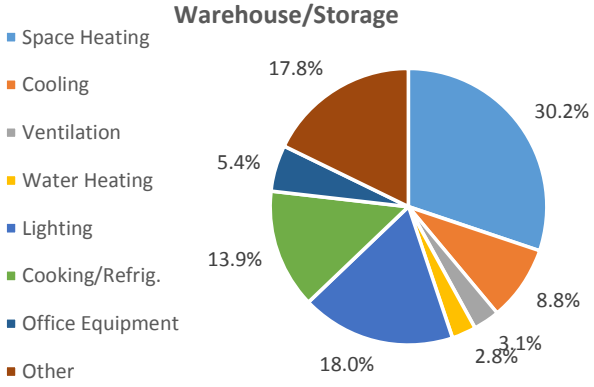


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: WAREHOUSE/STORAGE	
Space Heating	30.2%
Cooling	8.8%
Ventilation	3.1%
Water Heating	2.8%
Lighting	18.0%
Cooking/Refrig.	13.9%
Office Equipment	5.4%
Other	17.8%
Total	100.0%

Figure 2. Energy End Use Profile: Warehouse/Storage



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Roof Material	INSTALL A COOL ROOF PRODUCT. Cool roofs reflect sunlight/reduce solar heat gain. ENERGY STAR qualified cool roof products can lower roof surface temperature by up to 50°F, significantly decreasing the amount of heat transferred into a building.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 1

Asset 3010

Inspected August 27, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

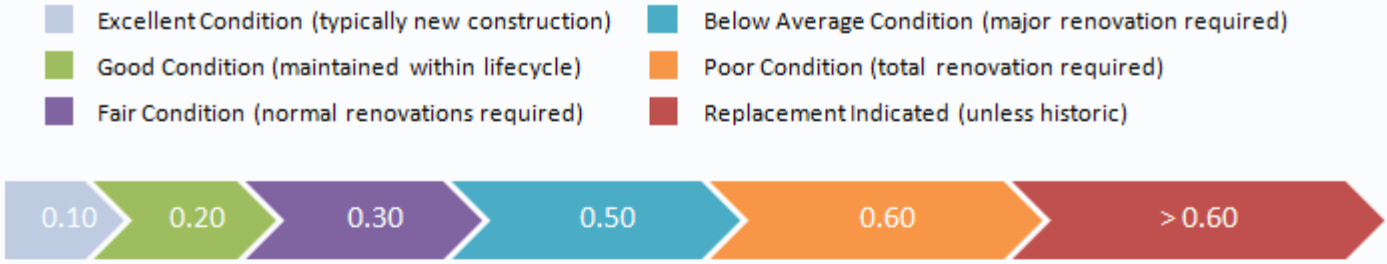
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

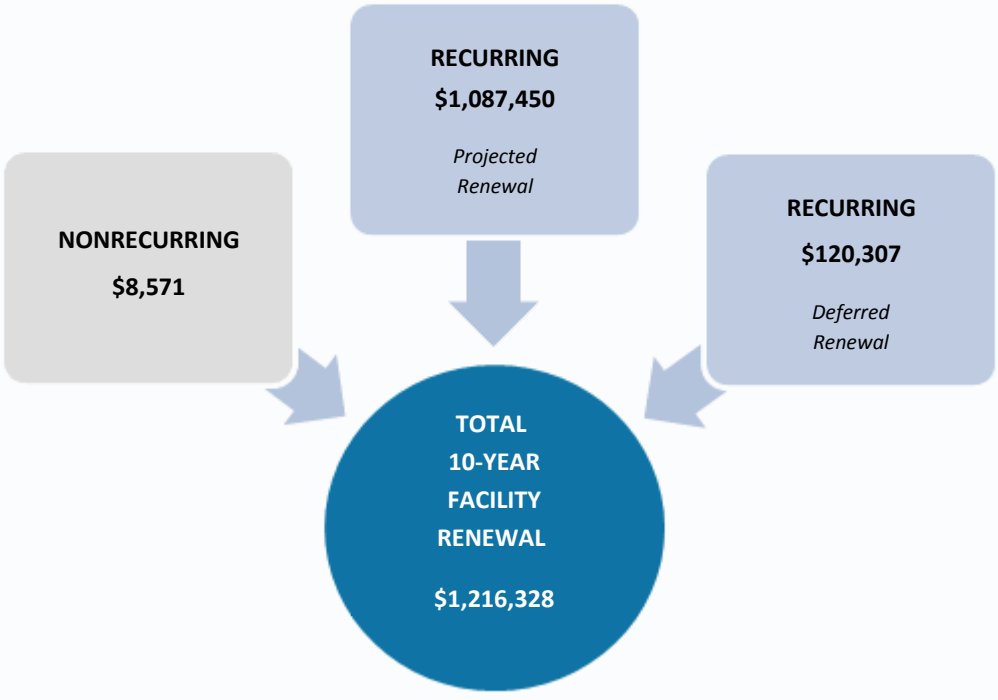
ASSET CODE	3010		
ASSET NAME	BUILDING 1	**CURRENT REPLACEMENT VALUE**	$7,046,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.17
YEAR BUILT	1976	**FACILITY CONDITION INDEX**	0.02
GSF	16,200	**10-YEAR $/SF**	75.08
INSPECTION DATE	08/27/2018		

FCNI Scale

The FCNI for this asset is **0.17**



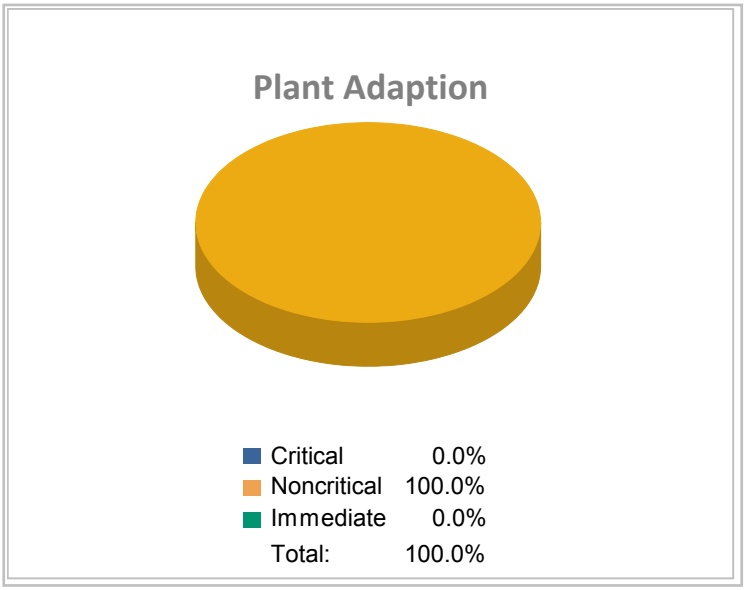
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

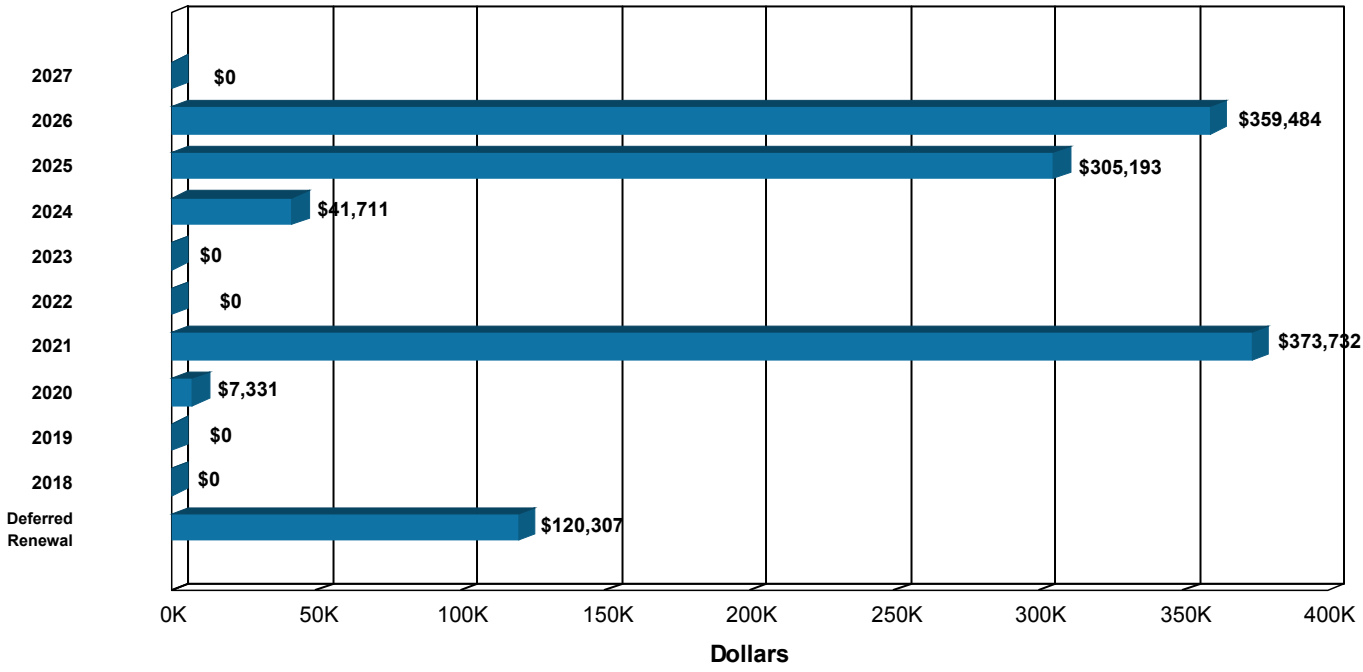
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$8,571**



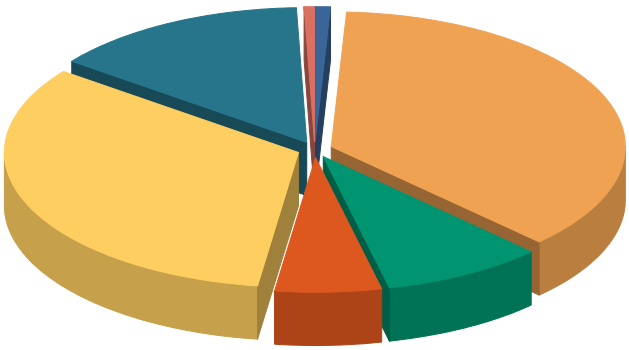
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$8,571	1%
Electrical	$448,606	37%
Exterior	$107,195	9%
Fire/Life Safety	$71,882	6%
Health	$0	0%
HVAC	$402,577	33%
Interiors	$169,176	14%
Plumbing	$8,321	1%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,216,328**	

ASSET SUMMARY

Building 1 was constructed in 1976 and is centrally located on the Portland Community College Rock Creek campus. The facility contains 16,200 square feet of space on two above-ground levels. Utilized as the campus services building, the interior spaces support the facilities and security departments, with the two floors divided between office, storage, and support spaces. The building underwent a major renovation in 2014.

Information for this report was gathered during an onsite visit on August 27, 2018.

Site

The landscaping around the building consists of planting beds, mature trees, and grassy lawns. Landscaping appeared to be adequately maintained on this campus and is in good condition. No landscaping site work appears to be needed at this time.

Pedestrian and vehicular paving systems consist of concrete and asphalt sidewalks and drives around the perimeter of the building. These surfaces are in good condition and should not require an upgrade within the next 10 years.

Exterior Structure

The roof is a pitched standing seam metal system with associated gutters for drainage. The roof was not accessible during the inspection, and campus personnel could not confirm the date of installation. It is believed that these systems were updated during the recent renovation and have more than 10 years of service life remaining.

Exterior walls are painted concrete and wood siding and were updated during the 2014 renovation. The painted finish remains in good condition and will continue to serve the building through the 10-year scope of this report. Except for a small amount of storefront glazing on the north elevation, exterior glazing was also updated in 2014. These newer units are in excellent condition, but the remaining original storefront and glazing systems have surpassed their useful service life and should be scheduled for near-term upgrade with modern, dual-pane, energy-efficient applications.

Most of the exterior doors were updated during the 2014 renovation and are in excellent condition, with only hardware upgrades projected during the purview of this report. A single hollow metal door with a glass panel located in room 117 was reported to be original and should be scheduled for near-term replacement. There are three overhead coiling doors located on the north elevation. Two of these doors were reported to be original, and the remaining door was replaced in 2014. The two older doors have surpassed their useful service lives and are recommended for replacement.

Interior Finishes/Systems

Flooring throughout the building consists of carpet, vinyl tile, Masonite, and sealed concrete. The carpet is in satisfactory condition. However, the lifecycle of carpet applications is dependent on building conditions and usage. The high traffic nature of this facility tends to reduce the average lifecycle. To maintain an acceptable interior appearance, replace timeworn, stained, or damaged carpet with new commercial-grade carpeting as needed. Masonite flooring found on the upper level and the vinyl tile are in excellent condition, with no recommended upgrades in the next 10 years. The sealed concrete applications found throughout the building are currently in satisfactory condition, but due to the high traffic and usage of these areas, they will need to be refinished during the purview of this report.

Walls are mainly painted applications. All painted finishes appear to be in good condition, but they should be renewed within the next 10 years. Durable applications that are appropriate for the use of the spaces are recommended. Ceramic tile walls in the restrooms are in satisfactory condition, with no recommended upgrades at this time.

Ceiling applications throughout the building are acoustical tile and painted finishes. These applications are in excellent condition and should outlast the 10-year scope of this report with only minimum required maintenance.

Casework and related countertops are generally in good condition and showing signs of normal use. Interior doors are typical wood and metal frame designs and are fire-rated according to the code requirements for these systems. Except for minimal door hardware upgrades, all interior door systems and casework applications are typically suitable for 10 or more additional years of service given the performance of normal maintenance.

Accessibility

With the recent renovation of this facility, the building has several accessible features. The building is accessible from grade at several points, and interior spaces have been designed to allow wheelchair access to all public spaces. A compliant elevator services both levels, and accessible restrooms, lever door hardware, Braille signage, and compliant stair handrails and guardrail infill are present. The underside of the west stairwell on the first floor lacks cane barriers, creating a low overhead clearance issue. Railing should be installed in this area.

Health

No health-related issues were observed or reported by facility personnel at the time of the onsite review for this building. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The Silent Knight addressable fire alarm control panel (FACP) is located on the second floor in room BDF-1. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on the normal life expectancy and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also fully protected by an automated fire suppression system with fusible link sprinkler heads. This relatively long-lived system appears to be in good condition and is anticipated to provide reliable service beyond the scope of this report, given the completion of normal testing, inspection, and maintenance as required per NFPA 25.

HVAC

Primary sources of heating, cooling, and ventilation are provided by an air handling unit (AHU), DX split systems, variable air volume (VAV) reheat boxes, ductwork, and a Honeywell direct digital control (DDC) system. The terminal assembly components of the DDC should provide approximately 20 years of service. However, the software and field panel DDC components have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns, and they are recommended for replacement. Updating these specific parts of the DDC system should enhance facility maintenance and energy efficiencies and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set-points where not already employed.

Boilers in Building 2 generate heating hot water for this building. The heating medium is distributed and circulated to the AHU heating coil and suspended hydronic heating units by two heating hot water pumps. The bulk of facility conditioned tempered air is provided by a two-pipe, variable volume, DX coil equipped AHU on the second floor. Supplemental local cooling is provided by two ductless DX split systems and the hydronic heating units. All equipment appears to be in working order and adequately sized. However, the heating units are original and should be considered for replacement. Where HVAC related equipment has been updated, such as the AHU, local distribution components were also replaced, accounting for approximately 20 percent of the distribution system in the building. Remaining original portions of the distribution system are recommended for replacement.

A few wall-mounted fans address facility exhaust needs. These units serve restrooms, mechanical spaces, and general exhaust requirements. The fan in room 117 was inaccessible but appears to be original. Replacement should be considered.

Electrical

Electrical power from a utility-owned 500 kVA transformer is fed to a main disconnect on the eastern exterior wall and then to the main switchboard on the first floor. The 277/480 volt General Electric switchboard has a rated capacity of 600 amps and was modernized in 2014. Power is then fed to the secondary electrical distribution network for 277/480 volt loads. Several step-down transformers provide 120/208 volt power where required. Original Square D electrical panelboards comprise the majority of the electrical equipment, although approximately 40 percent of the system was updated between 2014 and 2017. The original secondary electrical components are outdated and likely obsolete. Replacement is recommended.

Lighting throughout the facility consists of suspended T8 and LED fixtures. Wall-mounted non-HID fixtures illuminate the exterior perimeter. Although the inspection was performed in the daylight, the current lighting scheme seemed to address the majority of the sensible lighting opportunities. Based on typical lifecycle expectations, obsolescence, and the wide availability of LED lighting technology, replacement of all non-LED lighting is recommended. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The two drives in this building serve the main AHU and should provide reliable service over the next 10 years.

A 350 kW diesel-fired generator at the north side of the facility provides emergency electrical service for this building through a switchboard in Building 2, two local automatic transfer switches, and related emergency panelboards. The equipment was updated in 2012 and provides power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed throughout this facility by rigid copper piping. Where observed, sanitary waste, vent, and stormwater piping is cast iron. Both the supply and drain piping networks should continue to provide adequate service beyond the reporting purview. A residential electric water heater and two instantaneous units generate domestic hot water. Based on normal life expectancies, the instantaneous units should be considered for replacement within the next 10 years. There are three backflow preventer valves for the fire suppression and domestic water systems. The preventer valves protect the public water system from cross contamination and generally have a 20-year lifecycle if tested and maintained properly. The valves are presumably in good working order, with no issues noted by facility personnel. However, the domestic water valve is approaching 20 years and should be considered for replacement over the reporting tenure.

Plumbing fixtures in this building consist of tankless water closets, a urinal, lavatories, kitchen sinks, and janitor sinks. The plumbing fixtures will continue to serve the building well through the 10-year scope of this report.

Vertical Transportation

A hydraulic freight elevator serves the facility. The unit has a 3,500 pound capacity and transits two floors. The majority of the elevator components were modernized in 2004 by ThyssenKrupp, and the elevator has MCE controller components. While detailed elevator testing and inspection are not included in this assessment effort, the systems observed were in working condition and operating properly on the day of the inspection. No modernization is anticipated over the next 10 years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 27, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	8,571	0	0	0	0	0	0	0	0	0	0	0	$8,571
EXTERIOR	0	0	0	100,073	0	0	0	0	0	0	0	0	7,122	0	$107,195
INTERIOR	0	0	0	1,506	0	0	0	0	0	0	30,604	0	137,066	0	$169,176
PLUMBING	0	0	0	0	0	0	7,331	0	0	0	990	0	0	0	$8,321
HVAC	0	0	0	18,728	0	0	0	373,732	0	0	10,117	0	0	0	$402,577
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	71,882	0	0	$71,882
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	233,311	215,296	0	$448,606
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$0	$8,571	$120,307	$0	$0	$7,331	$373,732	$0	$0	$41,711	$305,193	$359,484	$0	$1,216,328
TOTAL NONRECURRING PROJECT NEEDS			$8,571	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,207,757	

CURRENT REPLACEMENT VALUE	$7,046,000
FACILITY CONDITION NEEDS INDEX	0.17
FACILITY CONDITION INDEX	0.02

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
16,200	$1,216,328	$75.08

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$8,571	$0	$8,571
EXTERIOR	$0	$107,195	$107,195
INTERIOR	$0	$169,176	$169,176
PLUMBING	$0	$8,321	$8,321
HVAC	$0	$402,577	$402,577
FIRE/LIFE SAFETY	$0	$71,882	$71,882
ELECTRICAL	$0	$448,606	$448,606
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$8,571**	**$1,207,757**	**$1,216,328**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3010AC01	OVERHEAD CANE BARRIER PROTECTION	C2010	3	Plant Adaption	8,571
				TOTAL	**$8,571**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3010	WN05	GLASS, STOREFRONT	ORIGINAL			B2010	Deferred Renewal	10,085
3010	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ORIGINAL			B2020	Deferred Renewal	32,314
3010	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL		117	B2030	Deferred Renewal	2,007
3010	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		2543	117	B2030	Deferred Renewal	22,922
3010	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	FMS	1872	115	B2030	Deferred Renewal	27,610
3010	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	FMS	1872	115	B2030	Deferred Renewal	2,095
3010	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		2543	117	B2030	Deferred Renewal	2,095
3010	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HM W/ GLASS PANEL		117	B2030	Deferred Renewal	946
3010	DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIGINAL		115, 117	C1020	Deferred Renewal	1,506
3010	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF		117, NE WALL	D3040	Deferred Renewal	1,057
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-109	1867	109	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-109	1868	109	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	1873	111	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	1874	111	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	1875	111	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	2546	117	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	2548	117	D3040	Deferred Renewal	1,262

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	2549	117	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2560	201	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2556	201	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2557	201	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2558	201	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2559	201	D3040	Deferred Renewal	1,262
3010	HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2561	201	D3040	Deferred Renewal	1,262
3010	BF03	BACKFLOW PREVENTER (2-3 INCHES)	DW BFP	1880	M1-1	D2020	2020	7,331
3010	HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL			D3040	2021	373,732
3010	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2024	30,604
3010	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT		RESTRM, BRK RM	D2020	2024	990
3010	BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				D3060	2024	10,117
3010	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2025	69,628
3010	FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	FACP	9881253 / 9881256	BDF-1	D4030	2025	2,254
3010	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	T8			D5020	2025	233,311
3010	DR36	DOOR PANIC HARDWARE, EXTERIOR	GM DRS			B2030	2026	2,374

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3010	DR36	DOOR PANIC HARDWARE, EXTERIOR	HM W/ GLASS PANEL			B2030	2026	4,748
3010	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	116,217
3010	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			1ST FL OFCS	C3020	2026	20,848
3010	SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	ORIGINAL			D5010	2026	215,296
							TOTAL	**$1,207,757**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	3010AC01	OVERHEAD CANE BARRIER PROTECTION	3	$8,571
		TOTAL FOR PLANT ADAPTION		**$8,571**
		GRAND TOTAL:		**$8,571**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	3010AC01	3	Plant Adaption	OVERHEAD CANE BARRIER PROTECTION	$8,571
				TOTAL FOR ACCESSIBILITY	**$8,571**
				GRAND TOTAL:	**$8,571**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

OVERHEAD CANE BARRIER PROTECTION

Project Number:	3010AC01	**Category Code:** AC3B	
Priority Sequence:	1		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/20/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.4	Not Applicable	Item Only: Floor(s) 1
ADAAG	308		

Description

There is no cane barrier protection for the low overhead under Stair 1. Railing should be installed to correct this low headroom condition.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted (15 feet minimum)	LF	20	$116	$2,321	$191	$3,820	$6,141
Base Material/Labor Costs				**$2,321**		**$3,820**	
Indexed Material/Labor Costs				**$2,307**		**$3,850**	**$6,157**
Construction Mark Up at 20.0%							**$1,231**
Original Construction Cost							**$7,389**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,389**
Professional Fees at 16.0%							**$1,182**
TOTAL PROJECT COST							**$8,571**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				7,330	SF	$90,037	2014	30		2044
WN05	GLASS, STOREFRONT	ORIGINAL			80	SF	$10,085	1976	40	1	DR
WN05	GLASS, STOREFRONT	UPDATED			300	SF	$37,818	2014	40		2054
WN05	GLASS, STOREFRONT	N LOBBY			10	SF	$1,261	2018	40		2058
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ORIGINAL			200	SF	$32,314	1976	40	1	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	UPDATED			200	SF	$32,314	2014	40		2054
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	W/ PANIC HDWR			2	LEAF	$6,044	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL			4	LEAF	$8,026	2014	40		2054
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL		117	1	LEAF	$2,007	1976	40	1	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	FMS	1869	109	265	SF	$27,610	2014	30		2044
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	FMS	1872	115	265	SF	$27,610	1976	30	11	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		2543	117	220	SF	$22,922	1976	30	11	DR
DR28	DOOR OPERATOR, POWER-ASSIST	INT DRS			2	EA	$13,541	2014	20		2034
DR28	DOOR OPERATOR, POWER-ASSIST	GM W/ PANIC			1	EA	$6,770	2014	20		2034
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	FMS	1869	109	1	EA	$2,095	2014	30		2044
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	FMS	1872	115	1	EA	$2,095	1976	30	11	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		2543	117	1	EA	$2,095	1976	30	11	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HM W/ GLASS PANEL		117	1	EA	$946	1976	12	29	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	HM W/ GLASS PANEL			4	EA	$4,748	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR	GM DRS			2	EA	$2,374	2014	12		2026
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			10,100	SF	$224,346	2014	40		2054
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	METAL			200	LF	$3,818	2014	20		2034
DR01	DOOR AND FRAME, INTERIOR, NON-RATED			OFFICES	7	LEAF	$15,480	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED			115, 117	2	LEAF	$7,337	1976	60		2036
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	W/ COM HDWR			19	LEAF	$69,702	2014	60		2074
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	OFFICE DRS			7	EA	$5,270	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIGINAL		115, 117	2	EA	$1,506	1976	35	6	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	UPDATED			19	EA	$14,305	2014	35		2049
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				35	LF	$19,631	2014	30		2044
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	CONCRETE & FIBER BD			12,220	SF	$68,758	2014	12	29	2055
IW01	WALL FINISH - APPLIED, STANDARD				41,640	SF	$116,217	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			RESTROOM	1,290	SF	$52,247	2014	60		2074

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			1ST FL OFCS	1,750	SF	$20,848	2014	12		2026
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	BREAK RM		112	150	SF	$1,032	2014	20		2034
IF10	FLOORING - HARDWOOD STRIP, STANDARD	MASONITE			4,370	SF	$69,803	2014	50		2064
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				8,750	SF	$30,604	2014	10		2024
IF26	INTERIOR STAIR TREAD AND LANDING FINISH				2	FLR	$7,871	2014	15		2029
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				2,920	SF	$32,500	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				11,660	SF	$32,543	2014	24		2038
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ROCK CREEK 1	4416	E1-1	1	EA	$335,379	2004	25		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				4	EA	$5,405	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN				2	EA	$1,545	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	$3,329	2014	50		2064
FX10	PLUMBING FIXTURE - URINAL				1	EA	$1,079	2014	35		2049
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				3	EA	$5,085	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		2545	110	1	EA	$1,080	2008	35		2043
BF01	BACKFLOW PREVENTER (<=1 INCH)	FIRE BYPASS BFP		M1-1	1	EA	$805	2014	20		2034
BF03	BACKFLOW PREVENTER (2-3 INCHES)	DW BFP	1880	M1-1	1	EA	$7,331	2000	20		2020

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP		M1-1	1	EA	$8,406	2014	20		2034
PS14	SUPPLY PIPING SYSTEM - OFFICE	ORIGINAL			8,100	SF	$33,511	1976	50	2	2028
PS14	SUPPLY PIPING SYSTEM - OFFICE	UPDATED			8,100	SF	$33,511	2014	50		2064
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH1	9420	201	50	GAL	$1,658	2014	15		2029
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT		RESTRM, BRK RM	2	EA	$990	2014	10		2024
PD14	DRAIN PIPING SYSTEM - OFFICE	ORIGINAL			8,100	SF	$50,125	1976	60		2036
PD14	DRAIN PIPING SYSTEM - OFFICE	UPDATED			8,100	SF	$50,125	2014	60		2074
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	ACCU-101	9139	W EXTERIOR	15	TON	$18,493	2014	25		2039
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	DDXS1, DAIKIN	9093	BDF-1	2	TON	$4,025	2012	25		2037
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	DDXS2, AAON	2407	E EXTERIOR	2	TON	$5,031	2005	25		2030
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-201	5604	201	8	HP	$44,991	2014	35		2049
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU-201 RF		201	3	HP	$3,963	2014	35		2049
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF		117, NE WALL	1	HP	$1,057	1976	35	6	DR
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-101	1881	M1-1	1	HP	$818	2014	20		2034
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-109	1867	109	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-109	1868	109	20	MBH	$1,262	1976	15	26	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	1873	111	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	1874	111	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	1875	111	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	2546	117	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2559	201	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2561	201	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	2548	117	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	2549	117	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2560	201	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2556	201	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2557	201	20	MBH	$1,262	1976	15	26	DR
HU25	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	2558	201	20	MBH	$1,262	1976	15	26	DR
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL			13,000	SF	$373,732	1976	45		2021
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	UPDATED			3,200	SF	$91,996	2014	45		2059
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-101	1878	M1-1	3	HP	$5,078	2014	30		2044
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-102	1877	M1-1	3	HP	$5,078	2014	30		2044

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE				16,200	SF	$35,887	2014	20		2034
BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				16,200	SF	$10,117	2014	10		2024
FS01	FIRE SPRINKLER SYSTEM - WET		9881283 / 1883		16,200	SF	$219,164	1976	80		2056
FA01	FIRE ALARM SYSTEM - DEVICES				16,200	SF	$69,628	2007	18		2025
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	FACP	9881253 / 9881256	BDF-1	1	EA	$2,254	2007	18		2025
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	ORIGINAL			9,720	SF	$215,296	1976	50		2026
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	UPDATED			6,480	SF	$143,530	2014	50		2064
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	4LS1, 4OS1, 4SA1, 2OS1 EMG PNLS		201	300	AMP	$25,013	2012	40		2052
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	MDP	4731	M110	600	AMP	$47,259	2014	40		2054
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU RF	7702	201	3	HP	$2,180	2012	15	1	2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU SF	7701	201	8	HP	$3,554	2012	15	1	2028
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	PERIMETER			3	EA	$2,315	2013	20		2033
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	T8			14,600	SF	$233,311	2005	20		2025
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	LED			1,600	SF	$20,958	2015	20		2035
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				1,600	SF	$3,674	2015	20		2035

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	ATS 4LS1	9129	201	40	AMP	$3,480	2012	25		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS 4OS1	9130	201	80	AMP	$4,422	2012	25		2037
						Grand Total:	$3,279,866				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	GLASS, STOREFRONT	ORIGINAL	80	SF	$10,085	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	ORIGINAL	200	SF	$32,314	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL	1	LEAF	$2,007	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	FMS	265	SF	$27,610	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		220	SF	$22,922	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	FMS	1	EA	$2,095	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		1	EA	$2,095	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HM W/ GLASS PANEL	1	EA	$946	DR
C1020	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIGINAL	2	EA	$1,506	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF	1	HP	$1,057	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-109	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-109	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-111	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	20	MBH	$1,262	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-117	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	20	MBH	$1,262	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (<=40 MBH)	UH-201	20	MBH	$1,262	DR
				TOTAL DEFERRED RENEWAL COST	**$120,307**	

No Projected Component Replacement Cost for Asset No. 3010 for 2018

No Projected Component Replacement Cost for Asset No. 3010 for 2019

2020						
UNI-FORMAT	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
D2020	BACKFLOW PREVENTER (2-3 INCHES)	DW BFP	1	EA	$7,777	2020
	2020			**PROJECTED COMPONENT REPLACEMENT COST**	**$7,777**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL	13,000	SF	$408,387	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$408,387	

No Projected Component Replacement Cost for Asset No. 3010 for 2022

No Projected Component Replacement Cost for Asset No. 3010 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		8,750	SF	$36,543	2024
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE		16,200	SF	$12,080	2024
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT	2	EA	$1,182	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$49,805	

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - OFFICE	T8	14,600	SF	$286,943	2025

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

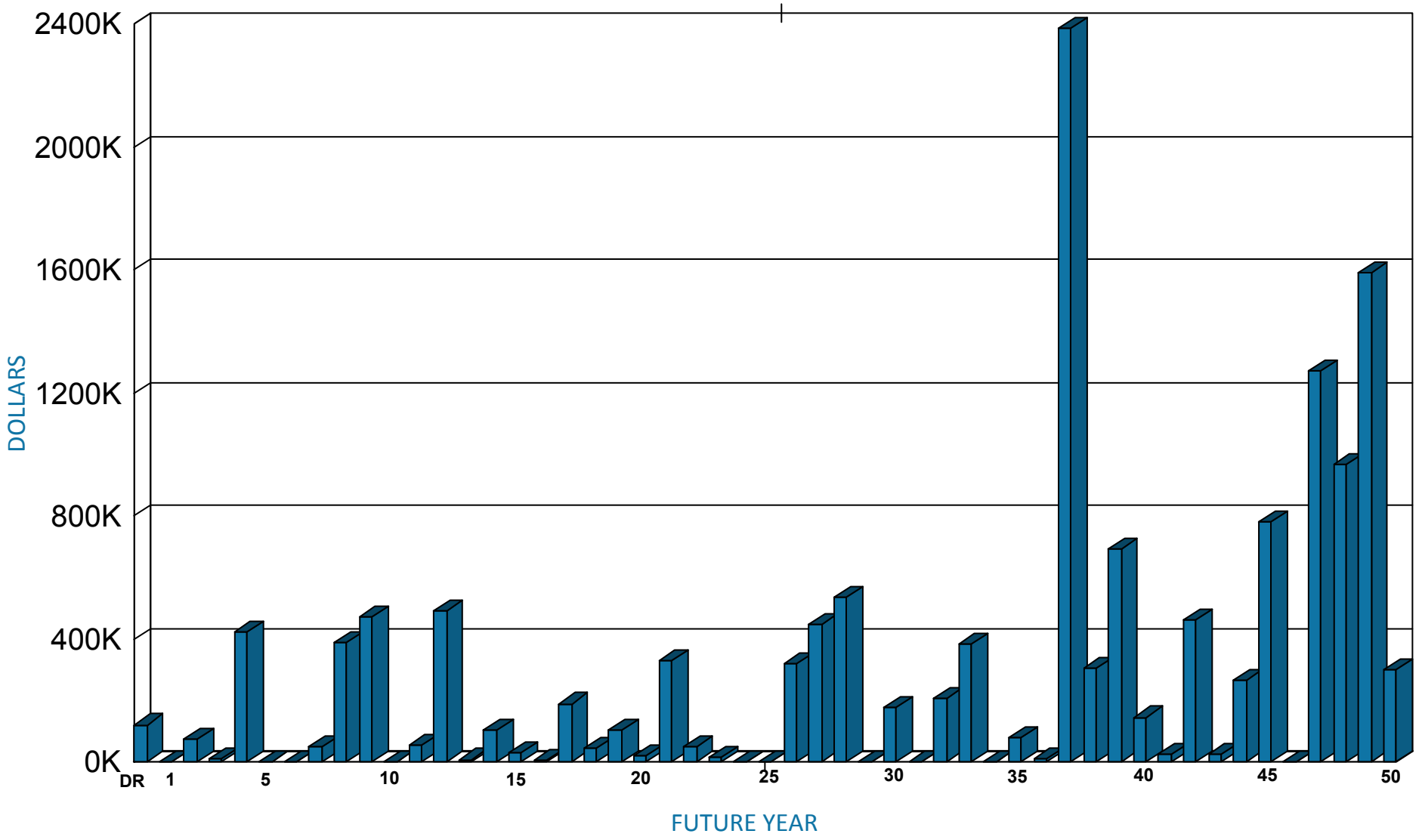
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	FACP	1	EA	$2,772	2025
D4030	FIRE ALARM SYSTEM - DEVICES		16,200	SF	$85,634	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$375,349**	

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		1,750	SF	$26,410	2026
C3010	WALL FINISH - APPLIED, STANDARD		41,640	SF	$147,221	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR	HM W/ GLASS PANEL	4	EA	$6,015	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR	GM DRS	2	EA	$3,007	2026
D5010	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	ORIGINAL	9,720	SF	$272,730	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$455,383**	

No Projected Component Replacement Cost for Asset No. 3010 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $6.86

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

BUILDING
I

BLDG NO. 3010

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

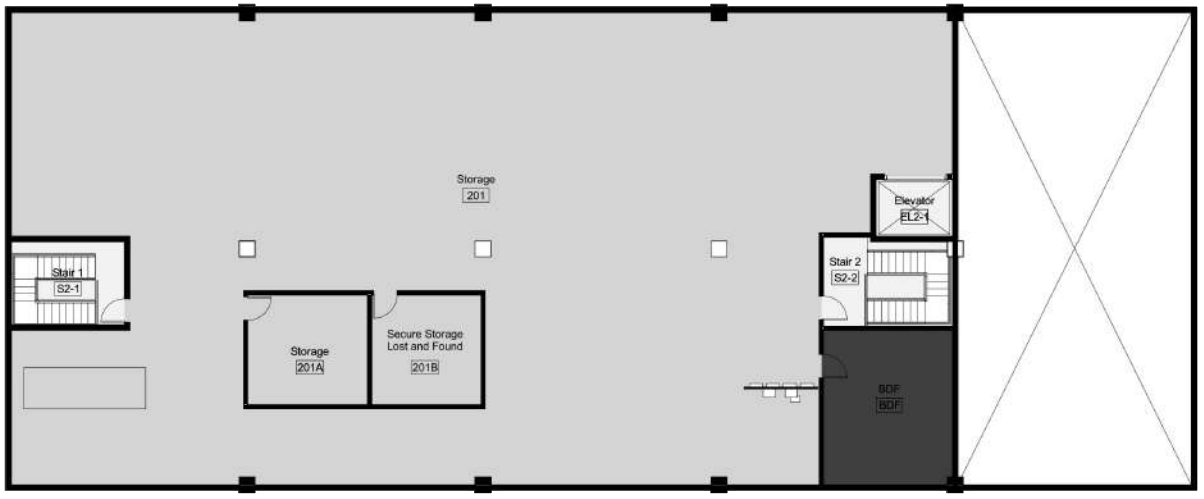
PROJECT NUMBER APPLIES TO AREA AS NOTED

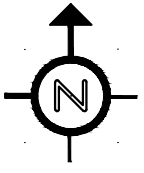
Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE





BUILDING
I

BLDG NO. 3010

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

3010001a 8/27/2018
Sheet metal and Masonite floors
Second floor

3010001e 8/27/2018
Wall-mounted, non-HID light fixture
Perimeter

3010002a 8/27/2018
Compliant handrails
Stairs

3010002e 8/27/2018
Variable volume, two-pipe, DX cooling AHU
Room 201

3010003a 8/27/2018
Overhead hazard lacking cane barriers
Stair 1

3010003e 8/27/2018
VFDs for supply fan and return fan of AHU
Room 201

3010004a 8/27/2018
Painted walls and hollow metal door
Second floor

3010004e 8/27/2018
Updated Honeywell DDC system
Room 201

3010005a 8/27/2018
Aged doors with noncompliant hardware
Room 115

3010005e 8/27/2018
Residential, electric domestic hot water heater
Room 201

3010006a 8/27/2018
Concrete interior finishes
Mechanical room

3010006e 8/27/2018
Typical suspended hydronic heating unit
Throughout

3010007a 8/27/2018
Fixtures mounted above compliant reach limits
Room 110

3010007e 8/27/2018
Suspended T8 fixtures
Throughout

3010008a 8/27/2018
Carpeted floors and painted surfaces
Room 111

3010008e 8/27/2018
Updated emergency electrical network equipment
Room 201

3010009a 8/27/2018
Sealed concrete flooring and applied finishes
Room 110

3010009e 8/27/2018
Fusible link metal fire suppression sprinkler head
Throughout

3010010a 8/27/2018
Vinyl tile floor, painted walls, and lay-in ceiling tiles
Room 112

3010010e 8/27/2018
Original HVAC ducting
Room 201

3010011a 8/27/2018
Casework with kitchen sink
Room 112

3010011e 8/27/2018
Addressable fire alarm control panel
Room BDF-1

3010012a 8/27/2018
Ceramic tile walls and wall-mounted lavatories
Restroom

3010012e 8/27/2018
Ductless DX evaporator unit
Room BDF-1

3010013a 8/27/2018
Ceramic tile walls and wall-mounted urinal
Restroom

3010013e 8/27/2018
Updated hydronic piping and original supply piping
Room 117

3010014a 8/27/2018
Ceramic tile walls and wall-mounted water closet
Restroom

3010014e 8/27/2018
Heating hot water pumps and distribution piping
Room M1-1

3010015a 8/27/2018
Painted wood and concrete exterior walls
Northwest corner

3010015e 8/27/2018
Domestic water backflow valve
Room M1-1

3010016a 8/27/2018

Overhead doors

North elevation

3010016e 8/27/2018

Updated secondary electrical equipment

Room M1-1

3010017a 8/27/2018

Painted wood and concrete exterior walls

East elevation

3010017e 8/27/2018

Emergency eyewash station

Room 110

3010018e 8/27/2018

Suspended LED light fixtures

Room 111

3010019e 8/27/2018

One of two instantaneous hot water heating units

First floor

3010020e 8/27/2018
Air-cooled DX condenser for indoor AHU
West exterior

3010021e 8/27/2018
Air-cooled ductless DX condenser units
East exterior

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3010
Asset Name	Building 1
Year Built or Last Energy Renovation	1976

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

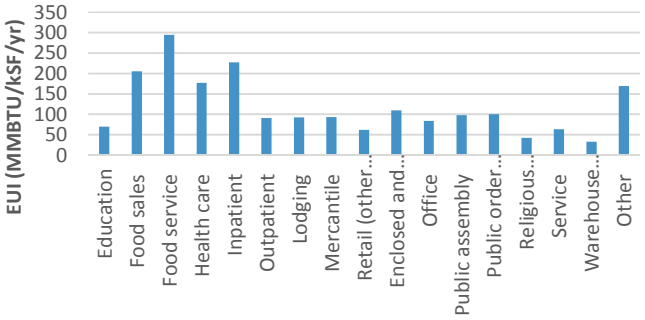
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**84**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 58.8
Energy Efficient (consumes 10% to 30% less energy)	58.8 <= EUI <= 75.6
Similar (consumes within 10% less or 10% more energy)	75.6 < EUI < 92.4
Energy Inefficient (consumes 10% to 30% more energy)	92.4 <= EUI <= 109.2
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 109.2

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

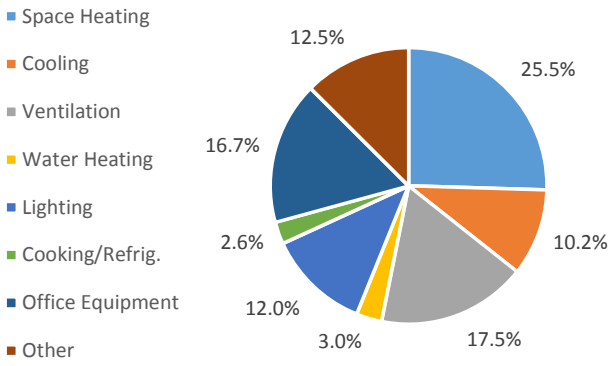


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 2

Asset 3020

Inspected August 27, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

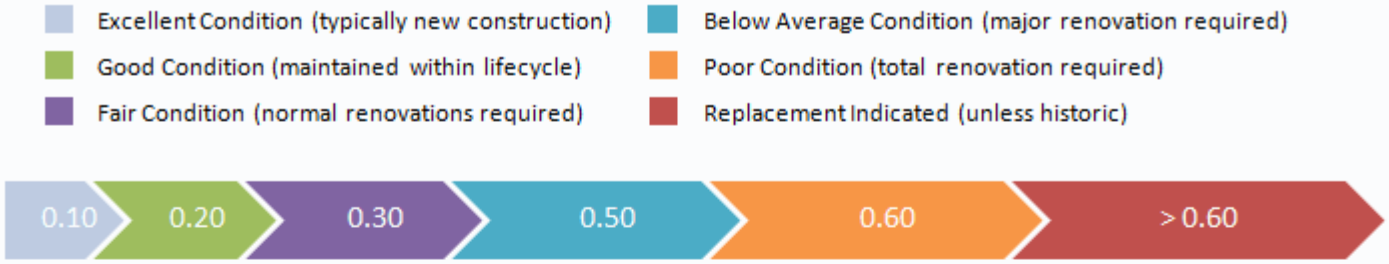
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

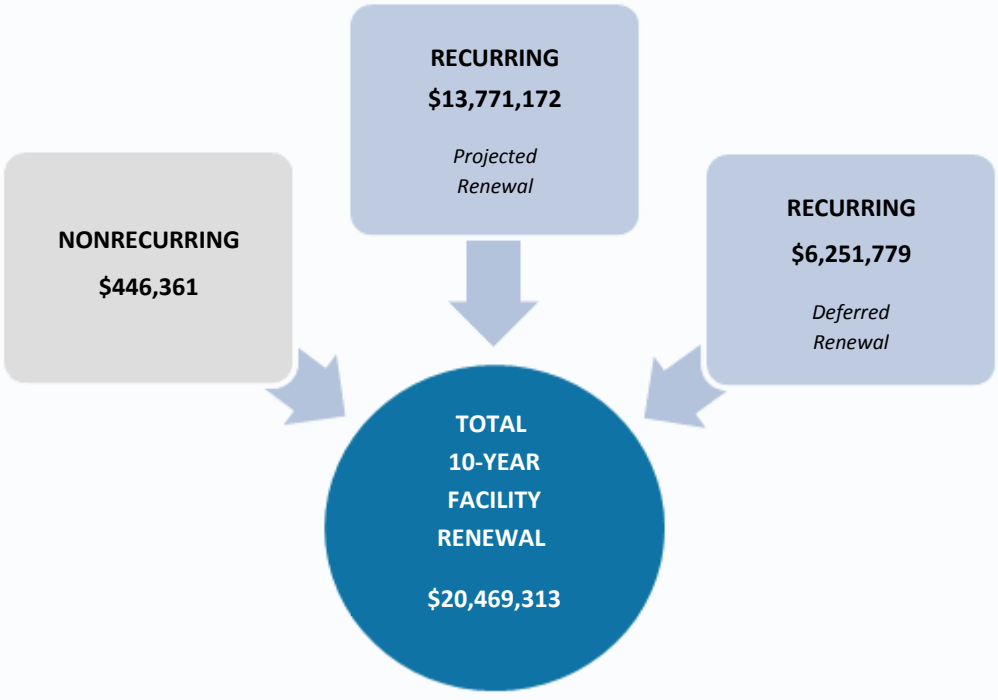
ASSET CODE	3020		
ASSET NAME	BUILDING 2	**CURRENT REPLACEMENT VALUE**	$69,026,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.30
YEAR BUILT	1976	**FACILITY CONDITION INDEX**	0.09
GSF	179,947	**10-YEAR $/SF**	113.75
INSPECTION DATE	08/27/2018		

FCNI Scale

The FCNI for this asset is **0.30**



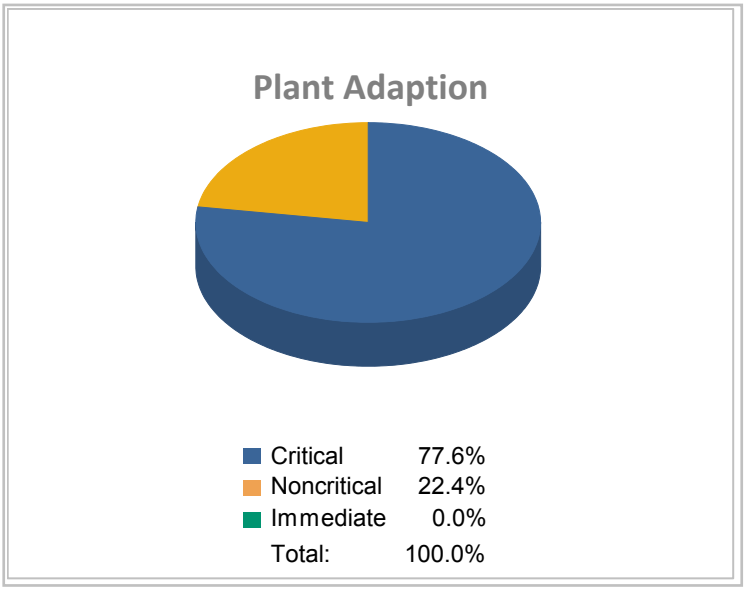
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

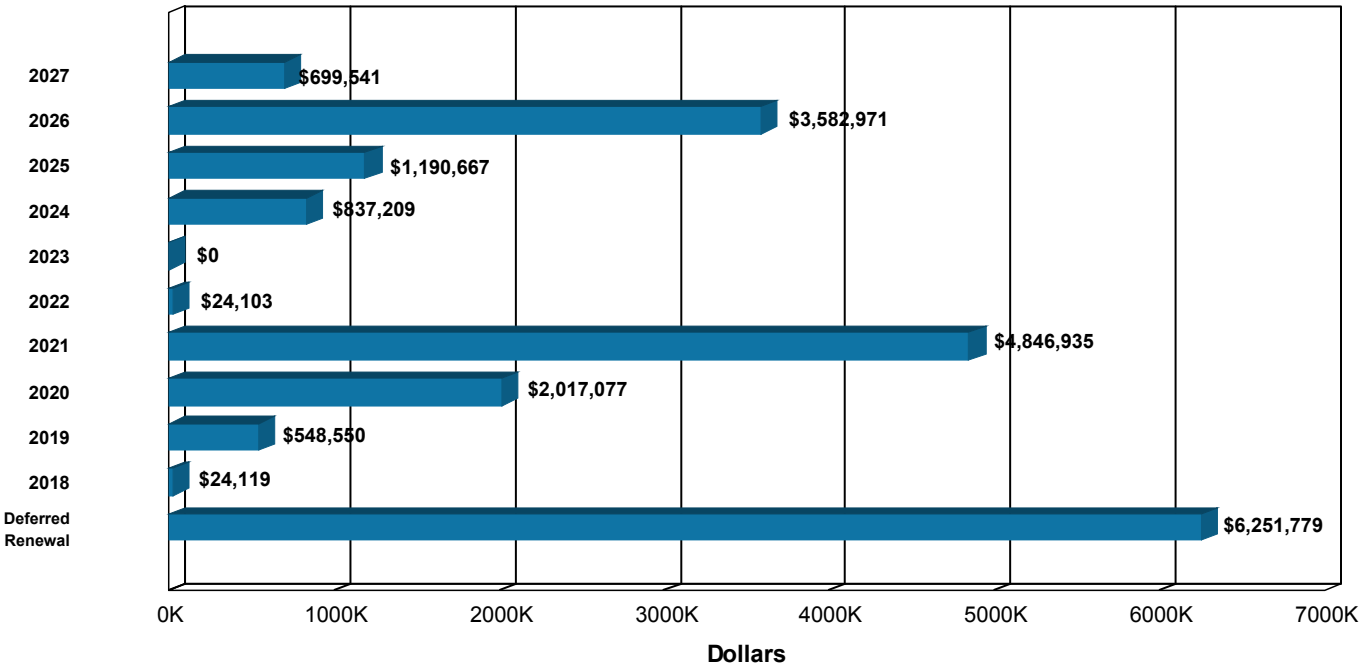
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$346,501**
3 - Noncritical	**$99,860**



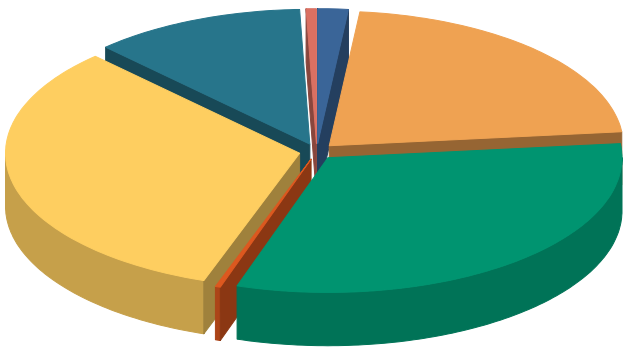
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$355,280	2%
Electrical	$4,400,937	22%
Exterior	$6,506,790	32%
Fire/Life Safety	$75,651	0%
Health	$0	0%
HVAC	$6,638,053	32%
Interiors	$2,353,721	11%
Plumbing	$138,880	1%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$20,469,313**	

ASSET SUMMARY

Building 2 is a two-story academic and administrative facility on the Portland Community College Rock Creek campus. Constructed in 1976, Building 2 is located at the north-central edge of campus. The second floor contains a combination of classrooms and office space, with an exterior walkway on the north elevation. The first floor houses several technical shops, including a large welding shop, auto body shop, wood shop, and others. The first floor also contains additional offices and classrooms. Collectively, the two floors in this building total 179,947 gross square feet.

Information for this report was gathered during a site visit conducted on August 27, 2018.

Site

The grounds around this facility are well planted and appear to be adequately maintained. No landscaping upgrades appear to be warranted at this time. The concrete walkways in the perimeter pedestrian arcades and the concrete sidewalks that wrap around most of the building are also in good overall condition at this time. No repairs or upgrades are recommended. Adjoining campus parking lots and the central asphalt service lot are addressed in a separate campus Infrastructure report.

Exterior Structure

The installation date of the main built-up roof (BUR) was not available at the time of the inspection, but campus personnel reported that work was performed on the roof in the early 1990s. The pitched metal roof was reported to be original. There are two types of skylights on the upper roof section—20 foot square pitched fiberglass units and long rectangular aluminum and glass systems. Much of the roofing is in poor condition, and the pitched metal roof and fiberglass skylights have passed their useful service lives. The flat BUR and aluminum and glass skylights will also require replacement during the scope of this report. It is recommended that a universal roofing project be scheduled for this building to upgrade all roofing components. Several areas of the roof are showing advanced signs of aging. These roof sections should also be closely monitored for any indication of failure.

The exterior painted concrete and wood siding are in good condition, with some localized staining. Repainted during a 2015 building renovation, the paint applications will again require renewal during the scope of this report. Prepare and repaint the exterior siding towards the end of the next 10 years to help protect the exterior from accelerated weathering and to maintain a good overall exterior building aesthetic.

The single-pane, metal-framed windows and storefront are showing some signs of age and should be scheduled for near-term upgrade. Install new thermal-pane, metal-framed glazing on all elevations. Rooftop clerestory glazing is single pane and weathered. It is recommended that this glazing also be replaced with new thermal-pane, anodized metal frames.

Exterior primary glass entry/egress doors, secondary metal exterior and service doors, and overhead coiling doors are showing signs of age and heavy use. All exterior doors and any older commercial hardware should be scheduled for a universal upgrade. Most of the exterior door hardware appears to have be replaced in 2015. Due to lifecycle considerations, it is recommended that this hardware be replaced during the latter stages of this report scope.

Interior Finishes/Systems

The interior finishes in the administrative and classroom areas are in fair to excellent condition. Much of the carpeting has been replaced over the course of several renovations, and it varies in appearance based on date of installation. Some of the carpeting is older and showing more wear. Vinyl floor tile in the support areas is also showing signs of aging. Based on standard wear and age, new carpet and vinyl tile should be installed in areas with older applications. To maintain an acceptable interior appearance, replace timeworn, stained, or damaged surfaces with new commercial-grade finishes.

Shop areas and corridors have more utilitarian finishes, including exposed concrete floors and either no formal ceiling systems or stained wood finishes. Some of these areas are in adequate condition. However, the concrete floors should be resealed. Ceramic tile in the newer restrooms is in excellent condition, but remaining restrooms have aged flooring dating to the original construction. The older restroom tile should be replaced in conjunction with recommended restroom renovations detailed in the Accessibility section of this report.

The majority of the interior walls and partitions have painted finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for buildings with this occupancy and use type. Minor repairs should be completed before work begins. Ceramic wall tiles in the restrooms are in satisfactory condition, with no projected upgrades within the next 10 years.

Ceilings are a combination of suspended tile, attached tile, and painted finishes. Most of these finishes are in good condition. Isolated concerns throughout the building should be addressed as part of routine maintenance. Older painted sheetrock ceilings should be scheduled for repainting during the midterm of this report.

Casework and related countertops are generally in good condition and showing signs of normal use. Interior doors are typical wood and metal frame, fire-rated applications. The interior door systems and casework applications are typically suitable for 10 or more additional years of service given the performance of normal maintenance.

Several interior overhead coiling doors are located throughout the building. Although not tested during the inspection, each of these doors was reported to be in good working order. However, based on service life expectations, the doors should be scheduled for replacement within the next three to five years.

Accessibility

The building has several at-grade entrances, and a compliant elevator provides access to both levels. Select restrooms on each floor have been recently upgraded to include ADA-compliant fixtures and clearance. Both levels also have compliant door hardware and Braille signage. However, several accessibility barriers were noted. The following recommendations will serve to both remove these barriers and update aging finishes.

Current legislation requires that building amenities be generally accessible to all people. With the exception of a dual-level drinking fountain on the first floor, drinking fountains in this building are single-level, wall-mounted units. The installations have no provisions to protect the accessible route from the projecting fountains, and the units vary in age and design. All single-level drinking fountains should be replaced with new dual-level applications, and each drinking fountain, including the existing dual-level fountain, should be set in a wheelchair-accessible alcove or flanked by wing walls to comply with current ADA standards.

Several restrooms in the facility do not meet current accessibility requirements. Although each floor has an accessible men's and women's restroom, the aged finishes and fixtures in the remaining restrooms warrant a complete upgrade. It is recommended that the older restrooms be remodeled to include new finishes, accessible fixtures, grab bars, mirrors, signage, and any other needed accessories.

Current legislation regarding building accessibility by the handicapped requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the interior and exterior stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

Health

There are multiple eyewash and eyewash/shower combination stations. These typically long-lived safety components are in good condition, tested regularly, and projected to be appropriate for sustained service well beyond the scope of this assessment.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The guardrails along the interior and exterior walkways do not comply with current code requirements. Install compliant guardrails in these locations.

The Silent Knight addressable fire alarm control panel (FACP) is located on the first floor in the west MDF room. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. No modernizations are anticipated over the next 10 years.

This facility is also fully protected by an automated fire suppression system with both fused-metal and glass bulb sprinkler heads. The system consists of both wet- and dry-pipe coverage. The relatively long-lived systems appear to be in adequate condition, and they are anticipated to provide reliable service beyond the scope of this report, given the completion of normal testing, inspection, and maintenance as required per NFPA 25.

HVAC

Primary sources of heating, cooling, and ventilation are provided by a blend of air handling units (AHUs), package units, make-up air units (MAUs), DX split systems, variable air volume (VAV) reheat boxes, ductwork, and a direct digital control (DDC) system. The terminal assembly components of the DDC should provide approximately 20 years of service. However, the software, field panel, and instrumentation DDC components have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns, and their replacement is recommended. Updating these specific parts of the DDC should enhance facility maintenance and energy efficiencies and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set-points where not already employed.

Five gas-fired boilers generate heating hot water for this building and Buildings 1, 3, and 6. Four of the five were being installed during the assessment. The hydronic heating medium is distributed and circulated to respective HVAC equipment heating coils and VAV reheat units by four newly installed main heating hot water pumps and four smaller “local” internal media pumps. Rooftop gas-fired MAUs and two-pipe AHUs in the overhead specifically address shop heating needs. Most heat-only HVAC equipment is original and noisy, and some equipment reportedly vibrates the ceiling of certain classrooms. Modernization is recommended. Facility conditioned tempered air for classrooms, common corridors, and office space is provided by single zone package units and variable speed outdoor, roof-mounted AHUs with hydronic heating, DX cooling, and associated return fans. The units appear to be in working order and adequately sized. Four of the units were installed in the mid-1990s and should be considered for upgrade within the next three to five years. Ductless DX and split system DX units address more space-specific HVAC needs. One evaporator and one air-cooled condenser unit will approach the end of their statistical lifecycle over the next 10 years and may require replacement. The majority of the HVAC distribution is original and due for replacement. Where equipment has been updated, such as the boiler room, local distribution components were also replaced and account for about 25 percent of the distribution system in the building.

Rooftop centrifugal fans and utility-type fans address facility exhaust needs. These units serve restrooms, mechanical spaces, shops, and general exhaust requirements. The majority of these fans are original and worn and are due for replacement. In some cases, such as the welding shop, environmental conditions significantly reduce expected equipment lifecycles, promoting replacement sooner than

expected. Additionally, only one exhaust fan is equipped with a variable frequency/speed drive. Fan replacement, including an appropriately-sized drive, will ensure lower energy and maintenance costs while maximizing future equipment operational availability. Fans installed in 2005 or later should continue to provide satisfactory service over the reporting tenure.

Electrical

Electrical power from two utility-owned 500 kVA transformers is fed to both an east wing and west wing main electrical room. Each room contains 277/480 volt switchgear and smaller secondary distribution components. Both sets of Square D switchgear have a rated capacity of 2,000 amps. The electrical distribution network was recently updated and should outlast the scope of this report.

The secondary electrical distribution network supplies both 277/480 and 120/208 volt power. Square D, Siemens, and Sorgel electrical equipment of various vintages receives the power for distribution through step-down transformers where 120/208 volt power is required. Circuits are then energized for mechanical, lighting, and general purpose loads. Although the majority of the panelboards appear to be original, updates to the system were made in the mid-1990s and then again in 2005 to address additional loading requirements related to building functionality and as part of HVAC equipment modernization efforts. The original secondary electrical components are worn and outdated. Replacement is recommended.

Lighting throughout the facility consists of T8, T5, T12, and LED fixtures. Overhead and wall-mounted LED light fixtures illuminate exterior spaces. Although the inspection was performed in the daylight, the current lighting scheme seemed to address the majority of the sensible lighting opportunities. Based on typical lifecycle expectations, obsolescence, and the wide availability of LED lighting technology, replacement of all non-LED lighting is recommended. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated. It is also recommended that exterior lighting be installed on the roof to illuminate mechanical equipment. This will help to ensure a safe environment for building workers during dark hours of the day. Place all new exterior lighting systems on photocell activation.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve AHUs, package units, and an exhaust fan. Installed between 2002 and 2015, the majority of the drives will reach the end of their statistical life expectancy within the reporting window. Replacement is recommended to avoid potential parts obsolescence and operational concerns that result from an undesired failure. This planned approach will likely provide additional energy savings, promote equipment lifecycles, and deliver advanced technological capabilities afforded by devices that are more modern.

A 350 kW diesel-fired generator at the southeast side of the facility provides emergency electrical service for this building and also Buildings 1 and 6. Power is fed through two automatic transfer switches

and related emergency panelboards. The equipment was updated in 2012 and provides power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed throughout this facility by rigid copper and galvanized piping. Where observed, sanitary waste, vent, and stormwater piping is of cast-iron and plastic construction. Both the supply and drain piping networks should continue to provide adequate service beyond the reporting purview.

Four residential electric water heaters and one instantaneous unit provide domestic hot water. Based on lifecycle expectations, three of the units should be considered for replacement within the next 10 years. Two backflow preventers (BFPs) were reported to be installed on the main domestic and fire suppression water lines, but none were observed. It is assumed that the BFPs are in good working order and should provide adequate service over the next 10 years. Two utility air compressors provide support for shop equipment. A single fountain pump at the western exterior circulates water in the outdoor pool. It is not equipped with any filtration and has a nominal amount of hydronic piping. No replacements are anticipated for this equipment.

The plumbing fixtures in this building consist of a dual-level drinking fountain, tankless water closets, urinals, utility sinks, kitchen sinks, individual lavatories, and gang lavatories. Select restroom and break room fixtures on both levels were updated in 2015 and are in excellent condition. The remaining plumbing fixtures are beyond their statistical lifecycles. It is recommended that the fixtures be replaced with new fixtures, including rough-ins. Specify automatic, hands-free faucets and flush valves for restroom fixtures. These should be hard-wired, not battery type. Also specify vacuum breaker equipped faucets for service sinks and other sinks with hose connections. Coordinate this work with proposed restroom finish and accessibility upgrades.

Vertical Transportation

Two hydraulic passenger elevators serve the facility. Elevator 1 has a 3,000 pound capacity, transits two floors, and has a mostly glass cab enclosure. Elevator 2 has a 3,500 pound capacity and transits two floors. The units were modernized with MCE controller components in 2003 and 2004 by ThyssenKrupp. A single-girder, 3 ton crane services the diesel shop. While detailed elevator and crane testing and inspection are not included in this assessment effort, the systems observed were reportedly in working condition and operating properly on the day of the inspection. No modernization is anticipated over the next 10 years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

Carl Mason, PE, BSCP, M.ASCE
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Date of Inspection

August 27, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	270,849	84,430	0	0	0	0	0	0	0	0	0	0	0	$355,280
EXTERIOR	0	0	0	4,357,973	0	0	1,665,280	0	0	0	0	377,749	0	105,788	$6,506,790
INTERIOR	0	0	0	870,788	0	0	22,298	45,948	0	0	831,598	0	0	583,090	$2,353,721
PLUMBING	0	0	0	126,219	3,349	0	990	0	0	0	0	0	8,322	0	$138,880
HVAC	0	0	0	857,764	0	548,550	302,995	4,800,987	24,103	0	5,611	98,042	0	0	$6,638,053
FIRE/LIFE SAFETY	0	75,651	0	0	0	0	0	0	0	0	0	0	0	0	$75,651
ELECTRICAL	0	0	15,430	39,035	20,770	0	25,514	0	0	0	0	714,876	3,574,649	10,663	$4,400,937
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$346,501	$99,860	$6,251,779	$24,119	$548,550	$2,017,077	$4,846,935	$24,103	$0	$837,209	$1,190,667	$3,582,971	$699,541	$20,469,313
TOTAL NONRECURRING PROJECT NEEDS			$446,361	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$20,022,951	

CURRENT REPLACEMENT VALUE	$69,026,000
FACILITY CONDITION NEEDS INDEX	0.30
FACILITY CONDITION INDEX	0.09

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
179,947	$20,469,313	$113.75

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$355,280	$0	$355,280
EXTERIOR	$0	$6,506,790	$6,506,790
INTERIOR	$0	$2,353,721	$2,353,721
PLUMBING	$0	$138,880	$138,880
HVAC	$0	$6,638,053	$6,638,053
FIRE/LIFE SAFETY	$75,651	$0	$75,651
ELECTRICAL	$15,430	$4,385,507	$4,400,937
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$446,361**	**$20,022,951**	**$20,469,313**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3020FS01	GUARDRAIL UPGRADES		2	Plant Adaption	75,651
3020AC04	EXTERIOR STAIR AND RAILING UPGRADES	C2020	2	Plant Adaption	22,861
3020AC02	RESTROOM ACCESSIBILITY UPGRADES	D2010	2	Plant Adaption	247,989
3020AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	67,285
3020AC03	INTERIOR STAIR AND RAILING UPGRADES	C2020	3	Plant Adaption	17,146
3020EL01	ROOF LIGHTING	D5020	3	Plant Adaption	15,430
				TOTAL	**$446,361**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	WN05	GLASS, STOREFRONT				B2010	Deferred Renewal	228,721
3020	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				B2020	Deferred Renewal	1,661,190
3020	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	W/ PANIC HDWR			B2030	Deferred Renewal	129,957
3020	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL			B2030	Deferred Renewal	26,085
3020	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ COM HDWR			B2030	Deferred Renewal	36,118
3020	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ PANIC HDWR			B2030	Deferred Renewal	44,144
3020	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	8X10			B2030	Deferred Renewal	16,670
3020	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	12X16			B2030	Deferred Renewal	40,009
3020	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	21X14			B2030	Deferred Renewal	91,896
3020	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	20X15			B2030	Deferred Renewal	312,571
3020	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	8X10			B2030	Deferred Renewal	4,189
3020	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	12X16			B2030	Deferred Renewal	4,189
3020	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	21X14			B2030	Deferred Renewal	6,284
3020	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	20X15			B2030	Deferred Renewal	20,945
3020	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HM DRS			B2030	Deferred Renewal	17,036
3020	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			B3010	Deferred Renewal	1,621,513

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL	BUR			B3020	Deferred Renewal	96,457
3020	IW01	WALL FINISH - APPLIED, STANDARD	2000			C3010	Deferred Renewal	334,000
3020	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2000			C3020	Deferred Renewal	81,011
3020	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	1976			C3020	Deferred Renewal	274,022
3020	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	2000			C3020	Deferred Renewal	169,949
3020	IF26	INTERIOR STAIR TREAD AND LANDING FINISH	1976			C3020	Deferred Renewal	11,806
3020	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	ORIGINAL			D2010	Deferred Renewal	17,213
3020	FX03	PLUMBING FIXTURE - LAVATORY, GANG	ORIGINAL			D2010	Deferred Renewal	47,629
3020	FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL			D2010	Deferred Renewal	1,545
3020	FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	ORIGINAL			D2010	Deferred Renewal	4,551
3020	FX10	PLUMBING FIXTURE - URINAL	ORIGINAL			D2010	Deferred Renewal	12,944
3020	FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	ORIGINAL			D2010	Deferred Renewal	40,679
3020	WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH2	1715	231	D2020	Deferred Renewal	1,658
3020	AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	H&V A-13		FST FLR, SW CORNER, ATTIC OF RM 98	D3040	Deferred Renewal	11,013
3020	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	H&V B-12	1702	117, OVHD	D3040	Deferred Renewal	52,027
3020	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	H&V A-12	1711	104, OVHD	D3040	Deferred Renewal	52,027

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	HVUA-11	1708	105, OVHD	D3040	Deferred Renewal	52,027
3020	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-11 / AHU01	1676	132, OVHD	D3040	Deferred Renewal	68,049
3020	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-12 / AHU02	1682	132, OVHD	D3040	Deferred Renewal	68,049
3020	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-13 / AHU126	1685	126, OVHD	D3040	Deferred Renewal	68,049
3020	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	HVUD-14 / AHU126	1686	131, OVHD	D3040	Deferred Renewal	127,857
3020	AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-2 WELDING (NE UNIT)	1608	NE ROOF	D3040	Deferred Renewal	57,809
3020	AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-1 WELDING	1609	N ROOF	D3040	Deferred Renewal	57,809
3020	AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-1	1611	N ROOF	D3040	Deferred Renewal	63,590
3020	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2		SE ROOF	D3040	Deferred Renewal	6,899
3020	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3		SE ROOF	D3040	Deferred Renewal	6,899
3020	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-4		SE ROOF	D3040	Deferred Renewal	6,899
3020	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RF-B-12	1701	117, OVHD	D3040	Deferred Renewal	4,161
3020	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RF-A-11	1707	105, OVHD	D3040	Deferred Renewal	4,161
3020	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	H&V A-12 RF	1710	104, OVHD	D3040	Deferred Renewal	4,161
3020	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF - SMALL ENGINE	1617	W ROOF	D3040	Deferred Renewal	5,466

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EEF-1	6628	W ROOF	D3040	Deferred Renewal	5,466
3020	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	TEF-4	4748	W ROOF	D3040	Deferred Renewal	5,466
3020	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	TEF-1 (BR EF)		SW CORNER, ATTIC OF RM 98	D3040	Deferred Renewal	5,466
3020	FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	TEF-2	1616	W ROOF	D3040	Deferred Renewal	8,073
3020	FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	TEF-5	4749	N ROOF	D3040	Deferred Renewal	15,500
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	TEF-3	1622	W ROOF	D3040	Deferred Renewal	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	PEF-1	1684	126, OVHD	D3040	Deferred Renewal	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-4 WELDING	2534	132, OVHD	D3040	Deferred Renewal	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-3 WELDING	2536	132, OVHD	D3040	Deferred Renewal	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-2 WELDING	2537	132, OVHD	D3040	Deferred Renewal	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-6 WELDING	2538	132, OVHD	D3040	Deferred Renewal	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-1 WELDING	2540	132, OVHD	D3040	Deferred Renewal	14,406
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RTUB22	1680	W ROOF	D5010	Deferred Renewal	3,633
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RTUA22	1699	W ROOF	D5010	Deferred Renewal	3,633
3020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-D22	1624	N ROOF	D5010	Deferred Renewal	3,554
3020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-B21	1694	W ROOF	D5010	Deferred Renewal	3,554
3020	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T12			D5020	Deferred Renewal	24,660

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	WH25	WATER HEATER - RESIDENTIAL, ELECTRIC (>100 GAL)	DWH1	1724	219	D2020	2018	3,349
3020	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTU-D22	1623	N ROOF	D5010	2018	6,433
3020	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTU-B21	1693	W ROOF	D5010	2018	6,433
3020	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTUB22	1679	W ROOF	D5010	2018	7,904
3020	AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-1	2566	E ROOF	D3040	2019	21,631
3020	HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-D22	1625, 1626, 1627	N ROOF	D3050	2019	155,245
3020	HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-B21	1690, 1691, 1692	W ROOF	D3050	2019	155,245
3020	HU33	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-B22	1677, 1678, 1681	W ROOF	D3050	2019	113,910
3020	HU33	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-A22	1695, 1696, 1697	W ROOF	D3050	2019	102,519
3020	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUR			B3010	2020	1,665,280
3020	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2000			C3020	2020	22,298
3020	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT		220G	D2020	2020	990
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-8 WELDING	2533	132, OVHD	D3040	2020	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-7 WELDING	2535	132, OVHD	D3040	2020	14,406
3020	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-5 WELDING	2539	132, OVHD	D3040	2020	14,406
3020	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	DDC		THROUGHOUT	D3060	2020	169,639

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	DDC		THROUGHOUT	D3060	2020	90,138
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-3		NW ROOF	D5010	2020	3,633
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-2		NW ROOF	D5010	2020	3,633
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-4		NW ROOF	D5010	2020	3,633
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-1 RF		NW ROOF	D5010	2020	3,633
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-3 RF		NW ROOF	D5010	2020	2,180
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-2 RF		NW ROOF	D5010	2020	2,180
3020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-4 RF		NW ROOF	D5010	2020	2,180
3020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HVU-1		NW ROOF	D5010	2020	4,443
3020	DR03	DOOR - OVERHEAD, INTERIOR	3X3			C1020	2021	938
3020	DR03	DOOR - OVERHEAD, INTERIOR	9X4			C1020	2021	3,751
3020	DR03	DOOR - OVERHEAD, INTERIOR	6X4			C1020	2021	7,502
3020	DR03	DOOR - OVERHEAD, INTERIOR	12X9			C1020	2021	33,758
3020	HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	ORIGINAL			D3040	2021	4,800,987
3020	AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-2	2568	SE ROOF	D3040	2022	24,103
3020	IW01	WALL FINISH - APPLIED, STANDARD	2012			C3010	2024	250,493
3020	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2012			C3020	2024	486,183

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2000			C3030	2024	94,922
3020	HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	ACU1	2510	WEST MDF RM	D3030	2024	5,611
3020	RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	METAL			B3020	2025	377,749
3020	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CNDR1	1939	S EXTERIOR	D3030	2025	6,869
3020	AH28	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (413-525 MBH INPUT)	MAU-1 DIESEL	1619	W ROOF	D3040	2025	33,363
3020	AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-2 WELDING (N UNIT)		N ROOF	D3040	2025	57,809
3020	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T8 & T5			D5020	2025	714,876
3020	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			D2010	2026	8,322
3020	SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			D5010	2026	3,574,649
3020	EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD				B2010	2027	13,200
3020	DR36	DOOR PANIC HARDWARE, EXTERIOR	HM W/GLASS PANEL			B2030	2027	15,431
3020	DR36	DOOR PANIC HARDWARE, EXTERIOR	HM DRS			B2030	2027	26,115
3020	DR36	DOOR PANIC HARDWARE, EXTERIOR	GM DRS			B2030	2027	51,042
3020	EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	STAIN WOOD EAVES			C3010	2027	30,947
3020	EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	PAINTED IN RENO			C3010	2027	276,834
3020	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2015			C3020	2027	162,021

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3020	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	2017			C3020	2027	113,288
3020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	PEF-2 VFD		126, OVHD	D5010	2027	3,554
3020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HVUD-13		126, OVHD	D5010	2027	3,554
3020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	PEF-1		126, OVHD	D5010	2027	3,554
							TOTAL	**$20,022,951**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	3020FS01	GUARDRAIL UPGRADES	2	$75,651
2	3020AC02	RESTROOM ACCESSIBILITY UPGRADES	2	$247,989
3	3020AC04	EXTERIOR STAIR AND RAILING UPGRADES	2	$22,861
4	3020AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$67,285
5	3020AC03	INTERIOR STAIR AND RAILING UPGRADES	3	$17,146
6	3020EL01	ROOF LIGHTING	3	$15,430
		TOTAL FOR PLANT ADAPTION		**$446,361**
		GRAND TOTAL:		**$446,361**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	3020AC02	2	Plant Adaption	RESTROOM ACCESSIBILITY UPGRADES	$247,989
3	3020AC04	2	Plant Adaption	EXTERIOR STAIR AND RAILING UPGRADES	$22,861
4	3020AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$67,285
5	3020AC03	3	Plant Adaption	INTERIOR STAIR AND RAILING UPGRADES	$17,146
				TOTAL FOR ACCESSIBILITY	**$355,280**
6	3020EL01	3	Plant Adaption	ROOF LIGHTING	$15,430
				TOTAL FOR ELECTRICAL	**$15,430**
1	3020FS01	2	Plant Adaption	GUARDRAIL UPGRADES	$75,651
				TOTAL FOR FIRE/LIFE SAFETY	**$75,651**
				GRAND TOTAL:	**$446,361**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

GUARDRAIL UPGRADES

Project Number:	3020FS01	**Category Code:** FS5E	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	8/27/2018	**Element:**	STAIRS AND RAILING

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 2

Description

The guardrails along the interior and exterior walkways do not comply with current code requirements. Install compliant guardrails in these locations.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Interior railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	350	$45.53	$15,936	$38.05	$13,318	$29,253
Exterior railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	300	$45.53	$13,659	$38.05	$11,415	$25,074
			Base Material/Labor Costs	**$29,595**		**$24,733**	
			Indexed Material/Labor Costs	**$29,417**		**$24,930**	**$54,347**
					Construction Mark Up at 20.0%		**$10,869**
					Original Construction Cost		**$65,217**
Date of Original Estimate: 8/27/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$65,217**
					Professional Fees at 16.0%		**$10,435**
					TOTAL PROJECT COST		**$75,651**

All costs shown as Present Value

RESTROOM ACCESSIBILITY UPGRADES

Project Number:	3020AC02	**Category Code:** AC3E	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/27/2018	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309, 603, 604, 605, 606, 607, 608	Not Applicable	Room Only: Floor(s) 1,2

Description

Several restrooms in the facility do not meet current accessibility requirements. Remodel the restrooms to include accessible fixtures, grab bars, mirrors, signage, and any other needed accessories. Coordinate this work with recommended finish upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Door operator, signage, and controls	EA	16	$3,841	$61,451	$1,037	$16,600	$78,050
Grab bars (per stall)	SYS	11	$180	$1,984	$424	$4,669	$6,653
Mirror	EA	12	$371	$4,456	$285	$3,422	$7,878
ADA-compliant lavatory	EA	12	$783	$9,396	$292	$3,498	$12,894
ADA-compliant toilet	EA	11	$1,230	$13,529	$325	$3,575	$17,104
High density polymer toilet partition modification	EA	11	$2,056	$22,613	$1,273	$14,006	$36,619
Roll-in shower	EA	2	$4,178	$8,356	$5.438	$10,876	$19,231
			Base Material/Labor Costs	**$121,785**		**$56,645**	
			Indexed Material/Labor Costs	**$121,055**		**$57,098**	**$178,153**
					Construction Mark Up at 20.0%		**$35,631**
					Original Construction Cost		**$213,783**
Date of Original Estimate:	8/27/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$213,783**
					Professional Fees at 16.0%		**$34,205**
					TOTAL PROJECT COST		**$247,989**

All costs shown as Present Value

EXTERIOR STAIR AND RAILING UPGRADES

Project Number:	3020AC04
Priority Sequence:	3
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	8/27/2018

Category Code: AC2A

System:	ACCESSIBILITY
Component:	BUILDING ENTRY
Element:	GENERAL

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2
ADAAG	505		

Description

Current legislation regarding building accessibility by the handicapped requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	4	$729	$2,918	$663	$2,653	$5,570
Switchback handrail/guardrail system per floor	FLR	4	$1,653	$6,610	$1,061	$4,244	$10,855
Base Material/Labor Costs				**$9,528**		**$6,897**	
Indexed Material/Labor Costs				**$9,471**		**$6,952**	**$16,423**
Construction Mark Up at 20.0%							**$3,285**
Original Construction Cost							**$19,708**
Date of Original Estimate: 8/27/2018						**Inflation**	**$0**
Current Year Construction Cost							**$19,708**
Professional Fees at 16.0%							**$3,153**
TOTAL PROJECT COST							**$22,861**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	3020AC01	**Category Code:** AC3F	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/27/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all people. With the exception of a dual-level drinking fountain on the first floor, drinking fountains in this building are single-level, wall-mounted units. The installations have no provisions to protect the accessible route from the projecting fountains, and the units vary in age and design. All single-level drinking fountains should be replaced with new dual-level applications, and each drinking fountain, including the existing dual-level fountain, should be set in a wheelchair-accessible alcove or flanked by wing walls to comply with current ADA standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	7	$1,549	$10,844	$476	$3,333	$14,177
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	8	$932	$7,459	$3,321	$26,572	$34,030
			Base Material/Labor Costs	**$18,303**		**$29,905**	
			Indexed Material/Labor Costs	**$18,193**		**$30,144**	**$48,337**
					Construction Mark Up at 20.0%		**$9,667**
					Original Construction Cost		**$58,004**
Date of Original Estimate: 8/27/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$58,004**
					Professional Fees at 16.0%		**$9,281**
					TOTAL PROJECT COST		**$67,285**

All costs shown as Present Value

INTERIOR STAIR AND RAILING UPGRADES

Project Number:	3020AC03	**Category Code:** AC3B	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/27/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2
ADAAG	505		

Description

Current legislation regarding building accessibility by the handicapped requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	3	$729	$2,188	$663	$1,989	$4,178
Switchback handrail/guardrail system per floor	FLR	3	$1,653	$4,958	$1,061	$3,183	$8,141
Base Material/Labor Costs				**$7,146**		**$5,173**	
Indexed Material/Labor Costs				**$7,103**		**$5,214**	**$12,317**
Construction Mark Up at 20.0%							**$2,463**
Original Construction Cost							**$14,781**
Date of Original Estimate: 8/27/2018						**Inflation**	**$0**
Current Year Construction Cost							**$14,781**
Professional Fees at 16.0%							**$2,365**
TOTAL PROJECT COST							**$17,146**

All costs shown as Present Value

ROOF LIGHTING

Project Number:	3020EL01	**Category Code:** EL4A	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	ELECTRICAL
Project Class:	Plant Adaption	**Component:**	DEVICES AND FIXTURES
Date Basis:	8/27/2018	**Element:**	EXTERIOR LIGHTING

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) R

Description

It is recommended that exterior lighting be installed on the roof to illuminate mechanical equipment. This will help to ensure a safe environment for building workers during dark hours of the day. Place all new exterior lighting systems on photocell activation.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install new commercial exterior building-mounted HID floodlight fixture	EA	20	$444	$8,884	$112	$2,236	$11,120
Base Material/Labor Costs				**$8,884**		**$2,236**	
Indexed Material/Labor Costs				**$8,831**		**$2,254**	**$11,085**
Construction Mark Up at 20.0%							**$2,217**
Original Construction Cost							**$13,302**
Date of Original Estimate: 8/27/2018						**Inflation**	**$0**
Current Year Construction Cost							**$13,302**
Professional Fees at 16.0%							**$2,128**
TOTAL PROJECT COST							**$15,430**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EF03	EXTERIOR STAIR TREAD AND LANDING FINISH				4	FLR	$15,741	2015	15		2030
EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD				4,704	FLR	$13,200	2015	12		2027
EW08	WALL, EXTERIOR, SIDING, T-111 PLYWOOD				19,680	SF	$265,883	2015	25		2040
WN05	GLASS, STOREFRONT				1,620	SF	$228,721	1976	40	1	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				9,180	SF	$1,661,190	1976	40	1	DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	W/ PANIC HDWR			43	LEAF	$129,957	1976	25	16	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL			13	LEAF	$26,085	1976	40	1	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ COM HDWR			18	LEAF	$36,118	1976	40	1	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ PANIC HDWR			22	LEAF	$44,144	1976	40	1	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	8X10			160	SF	$16,670	1976	30	11	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	21X14			882	SF	$91,896	1976	30	11	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	12X16			384	SF	$40,009	1976	30	11	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	20X15			3,000	SF	$312,571	1976	30	11	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	8X10			2	EA	$4,189	1976	30	11	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	21X14			3	EA	$6,284	1976	30	11	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	12X16			2	EA	$4,189	1976	30	11	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	20X15			10	EA	$20,945	1976	30	11	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HM DRS			18	EA	$17,036	2000	12	5	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	GM DRS			43	EA	$51,042	2015	12		2027
DR36	DOOR PANIC HARDWARE, EXTERIOR	HM W/GLASS PANEL			13	EA	$15,431	2015	12		2027
DR36	DOOR PANIC HARDWARE, EXTERIOR	HM DRS			22	EA	$26,115	2015	12		2027
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUR			59,000	SF	$1,665,280	1990	30		2020
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			73,000	SF	$1,621,513	1976	40	1	DR
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL	BUR			1,600	SF	$96,457	1990	20	7	DR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	METAL			1,320	SF	$377,749	1990	35		2025
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	ORIG, W/ COM HDWR		OFFICES	50	LEAF	$110,572	1976	60		2036
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	UPDATED, W/ COM HDWR			20	LEAF	$44,229	2015	60		2075
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ PANIC HDWR			15	LEAF	$55,028	1976	60		2036
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	UPDATED, W/ PANIC HDWR			5	LEAF	$18,343	2015	60		2075
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ SEC HDWR			20	LEAF	$73,371	1976	60		2036
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ COM HDWR			35	LEAF	$128,399	1976	60		2036
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	UPDATED, W/ COM HDWR			30	LEAF	$110,056	2015	60		2075

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR03	DOOR - OVERHEAD, INTERIOR	6X4			72	SF	$7,502	1976	45		2021
DR03	DOOR - OVERHEAD, INTERIOR	12X9			324	SF	$33,758	1976	45		2021
DR03	DOOR - OVERHEAD, INTERIOR	9X4			36	SF	$3,751	1976	45		2021
DR03	DOOR - OVERHEAD, INTERIOR	3X3			9	SF	$938	1976	45		2021
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR			OFFICES	135	EA	$101,641	2015	35		2050
DR26	DOOR PANIC HARDWARE, INTERIOR				20	EA	$23,739	2015	30		2045
DR27	DOOR LOCK, SECURITY, INTERIOR				20	EA	$29,264	2015	25		2040
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	OLDER			40	LF	$22,435	2000	30		2030
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	NEWER			25	LF	$14,022	2015	30		2045
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	PAINTED IN RENO			49,200	SF	$276,834	2015	12		2027
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	STAIN WOOD EAVES			5,500	SF	$30,947	2015	12		2027
IW01	WALL FINISH - APPLIED, STANDARD	2000			119,670	SF	$334,000	2000	12	5	DR
IW01	WALL FINISH - APPLIED, STANDARD	2012			89,750	SF	$250,493	2012	12		2024
IW01	WALL FINISH - APPLIED, STANDARD	2017			89,750	SF	$250,493	2017	12		2029
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	1976			12,600	SF	$510,320	1976	60		2036
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	2015			3,150	SF	$127,580	2015	60		2075

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2012			40,810	SF	$486,183	2012	12		2024
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2015			13,600	SF	$162,021	2015	12		2027
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2018			6,800	SF	$81,011	2018	12		2030
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2000			6,800	SF	$81,011	2000	12	5	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2000			3,240	SF	$22,298	2000	20		2020
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	1976			7,770	SF	$274,022	1976	40	1	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	2015			1,940	SF	$68,417	2015	40		2055
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	2000			48,590	SF	$169,949	2000	10	7	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	2017			32,390	SF	$113,288	2017	10		2027
IF26	INTERIOR STAIR TREAD AND LANDING FINISH	1976			3	FLR	$11,806	1976	15	26	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2000			24,290	SF	$270,352	2000	45		2045
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2015			24,290	SF	$270,352	2015	45		2060
IC03	CEILING FINISH - ATTACHED ACOUSTICAL TILE	2015			16,200	SF	$125,344	2015	45		2060
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2000			34,010	SF	$94,922	2000	24		2024
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2015			79,360	SF	$221,494	2015	24		2039
CN06	BRIDGE CRANE, 1 GIRDER, 30' SPAN <= 4 TON	DIESEL SHOP CRANE		117	3	TON	$56,577	2010	60		2070

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
CN23	BRIDGE CRANE RAIL	DIESEL SHOP CRANE		117	50	LF	$3,636	2010	60		2070
CN24	BRIDGE CRANE CONTROLS <13 TON	DIESEL SHOP CRANE		117	3	TON	$5,611	2010	20		2030
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	4382	219	1	EA	$309,580	2003	25		2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 2	4383	105	1	EA	$309,580	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	$2,694	2015	25		2040
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER	ORIGINAL			20	EA	$17,213	1976	25	16	DR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	UPDATED			9	EA	$12,160	2015	35		2050
FX03	PLUMBING FIXTURE - LAVATORY, GANG	ORIGINAL			6	EA	$47,629	1976	35	6	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL			2	EA	$1,545	1976	20	21	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	UPDATED			1	EA	$773	2015	20		2035
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			5	EA	$8,322	1976	50		2026
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	ORIGINAL			4	EA	$4,551	1976	35	6	DR
FX10	PLUMBING FIXTURE - URINAL	ORIGINAL			12	EA	$12,944	1976	35	6	DR
FX10	PLUMBING FIXTURE - URINAL	UPDATED			6	EA	$6,472	2015	35		2050
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	ORIGINAL			24	EA	$40,679	1976	35	6	DR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	UPDATED			11	EA	$18,645	2015	35		2050

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			VARIOUS SHOPS	3	EA	$3,240	2014	35		2049
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH			VARIOUS SHOPS	3	EA	$4,616	2014	35		2049
BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP		M1-2	1	EA	$1,107	2010	20		2030
BF05	BACKFLOW PREVENTER (4-6 INCHES)	FIRE BFP		NE MECH RM	1	EA	$12,272	2010	20		2030
PS02	SUPPLY PIPING SYSTEM - CLASSROOM	ORIGINAL			179,947	SF	$2,060,554	1976	50	2	2028
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	DWH3		SW CORNER, ATTIC OF RM 98	30	GAL	$1,367	2016	15		2031
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH2	1715	231	50	GAL	$1,658	2000	15	2	DR
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH4		1ST FL, AUTO BODY	80	GAL	$2,652	2017	15		2032
WH25	WATER HEATER - RESIDENTIAL, ELECTRIC (>100 GAL)	DWH1	1724	219	120	GAL	$3,349	2003	15		2018
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT		220G	1	EA	$990	2010	10		2020
PD02	DRAIN PIPING SYSTEM - CLASSROOM	ORIGINAL			179,947	SF	$3,091,546	1976	60		2036
CP01	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	FOUNTAIN PUMP		W EXTERIOR	2	HP	$3,131	2016	15		2031
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UAC1	2370	E1-1	2	HP	$4,565	2001	25	2	2028
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	UAC	9207	M1-2	25	HP	$48,373	2009	25		2034
BL05	BOILER - GAS/OIL (>2,000 MBH)	BL1	2343	M1-2	14,000	MBH	$1,193,629	2009	28		2037
BL28	BOILER - GAS (2400-3500 MBH)	BL5		M1-2	2,790	MBH	$70,658	2018	28		2046

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BL28	BOILER - GAS (2400-3500 MBH)	BL4		M1-2	2,790	MBH	$70,658	2018	28		2046
BL28	BOILER - GAS (2400-3500 MBH)	BL3		M1-2	2,790	MBH	$70,658	2018	28		2046
BL28	BOILER - GAS (2400-3500 MBH)	BL2		M1-2	2,790	MBH	$70,658	2018	28		2046
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU2	1938	S EXTERIOR	3	TON	$6,869	2005	25		2030
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CNDR1	1939	S EXTERIOR	3	TON	$6,869	2000	25		2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CNDR2 MDF	2333	NW EXTERIOR	2	TON	$4,580	2005	25		2030
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	ACU MDF	2061	WEST MDF RM	2	TON	$4,648	2005	30		2035
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	ACU1	2510	WEST MDF RM	3	TON	$5,611	1994	30		2024
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	ACU2	2511	WEST MDF RM	3	TON	$5,611	2005	30		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DDXS1 - IT SPACES	4074	W ROOF	8	TON	$38,761	2014	20		2034
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	H&V A-13		FST FLR, SW CORNER, ATTIC OF RM 98	1	HP	$11,013	1976	35	6	DR
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	H&V B-12	1702	117, OVHD	5	HP	$52,027	1976	35	6	DR
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	H&V A-12	1711	104, OVHD	5	HP	$52,027	1976	35	6	DR
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	HVUA-11	1708	105, OVHD	5	HP	$52,027	1976	35	6	DR
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-11 / AHU01	1676	132, OVHD	8	HP	$68,049	1976	35	6	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-12 / AHU02	1682	132, OVHD	8	HP	$68,049	1976	35	6	DR
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-13 / AHU126	1685	126, OVHD	8	HP	$68,049	1976	35	6	DR
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	HVUD-14 / AHU126	1686	131, OVHD	15	HP	$127,857	1976	35	6	DR
AH17	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	HVU-3	1640	NW ROOF	5	HP	$110,396	2005	25		2030
AH17	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	HVU-2	1642	NW ROOF	5	HP	$110,396	2005	25		2030
AH17	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	HVU-4	1648	NW ROOF	5	HP	$110,396	2005	25		2030
AH18	AIR HANDLING UNIT - OUTDOOR PACKAGE (5-8 HP)	HVU-1	1645	NW ROOF	8	HP	$140,056	2005	25		2030
AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-2	2568	SE ROOF	312	MBH	$24,103	1997	25		2022
AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-1	2566	E ROOF	280	MBH	$21,631	2004	25	-10	2019
AH28	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (413-525 MBH INPUT)	MAU-1 DIESEL	1619	W ROOF	500	MBH	$33,363	2000	25		2025
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU (NEW)	9313	NE ROOF	1,000	MBH	$57,809	2018	25		2043
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-2 WELDING (NE UNIT)	1608	NE ROOF	1,000	MBH	$57,809	1976	25	16	DR
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-1 WELDING	1609	N ROOF	1,000	MBH	$57,809	1976	25	16	DR
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU (NEW-1)	9312	N ROOF	1,100	MBH	$63,590	2018	25		2043
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-2 WELDING (N UNIT)		N ROOF	1,000	MBH	$57,809	2000	25		2025

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-1	1611	N ROOF	1,100	MBH	$63,590	1991	25	1	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5		E ROOF	1	EA	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6		E ROOF	1	EA	$3,773	2004	25		2029
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-1		SE ROOF	1	EA	$6,899	2012	25		2037
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2		SE ROOF	1	EA	$6,899	1976	25	16	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3		SE ROOF	1	EA	$6,899	1976	25	16	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-4		SE ROOF	1	EA	$6,899	1976	25	16	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HVU-3 RF	1641	NW ROOF	3	HP	$3,963	2005	35		2040
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HVU-2 RF	1643	NW ROOF	3	HP	$3,963	2005	35		2040
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HVU-1 RF	1646	NW ROOF	5	HP	$6,604	2005	35		2040
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HVU-4 RF	1649	NW ROOF	3	HP	$3,963	2005	35		2040
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RF-B-12	1701	117, OVHD	3	HP	$4,161	1976	35	6	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RF-A-11	1707	105, OVHD	3	HP	$4,161	1976	35	6	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	H&V A-12 RF	1710	104, OVHD	3	HP	$4,161	1976	35	6	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF - SMALL ENGINE	1617	W ROOF	1	HP	$5,466	1976	40	1	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EEF-1	6628	W ROOF	1	HP	$5,466	1976	40	1	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	TEF-4	4748	W ROOF	1	HP	$5,466	1976	40	1	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	TEF-1 (BR EF)		SW CORNER, ATTIC OF RM 98	1	HP	$5,466	1976	40	1	DR
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	TEF-5	4749	N ROOF	3	HP	$15,500	1976	40	1	DR
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-1 DIESEL	1619	W ROOF	3	HP	$15,500	2005	40		2045
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	TEF-2	1616	W ROOF	2	HP	$8,073	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-1	2567	E ROOF	10	HP	$28,812	2004	40		2044
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-1	1614	N ROOF	10	HP	$28,812	2000	40		2040
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	PEF-2	1683	126, OVHD	8	HP	$14,406	2012	40		2052
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	PEF-1	1684	126, OVHD	8	HP	$14,406	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	TEF-3	1622	W ROOF	5	HP	$14,406	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-5 WELDING	2539	132, OVHD	8	HP	$14,406	2000	40	-20	2020
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-1 WELDING	2540	132, OVHD	8	HP	$14,406	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-8 WELDING	2533	132, OVHD	8	HP	$14,406	2000	40	-20	2020
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-4 WELDING	2534	132, OVHD	8	HP	$14,406	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-7 WELDING	2535	132, OVHD	8	HP	$14,406	2000	40	-20	2020

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-3 WELDING	2536	132, OVHD	8	HP	$14,406	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-2 WELDING	2537	132, OVHD	8	HP	$14,406	1976	40	1	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-6 WELDING	2538	132, OVHD	8	HP	$14,406	1976	40	1	DR
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	ORIGINAL			134,957	SF	$4,800,987	1976	45		2021
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	HHW BLDG UPDATES			44,990	SF	$1,600,483	2018	45		2063
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-7	1652	HVU-3, NW ROOF	1	HP	$1,693	2005	30		2035
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-6	1653	HVU-2, NW ROOF	1	HP	$1,693	2005	30		2035
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-5	1654	HVU-1, W ROOF	1	HP	$1,693	2005	30		2035
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-8	1655	HVU-4, W ROOF	1	HP	$1,693	2005	30		2035
PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP-1		M1-2	15	HP	$31,144	2018	35		2053
PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP-2		M1-2	15	HP	$31,144	2018	35		2053
PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP-3		M1-2	15	HP	$31,144	2018	35		2053
PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP-4		M1-2	15	HP	$31,144	2018	35		2053
HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-D22	1625, 1626, 1627	N ROOF	30	TON	$155,245	1994	25		2019
HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-1	5248	N ROOF	30	TON	$155,245	2014	25		2039
HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-2	1633, 1636, 1637	NW ROOF	25	TON	$129,371	2005	25		2030

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-4	1660, 1663, 1666	NW ROOF	25	TON	$129,371	2005	25		2030
HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-3	1668	W ROOF	25	TON	$129,371	2005	25		2030
HU32	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-B21	1690, 1691, 1692	W ROOF	30	TON	$155,245	1994	25		2019
HU33	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-1	1670, 1672, 1674	W ROOF	36	TON	$102,519	2005	25		2030
HU33	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-B22	1677, 1678, 1681	W ROOF	40	TON	$113,910	1994	25		2019
HU33	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-A22	1695, 1696, 1697	W ROOF	36	TON	$102,519	1994	25		2019
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM	DDC		THROUGHOUT	179,947	SF	$609,620	2010	20		2030
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	DDC		THROUGHOUT	179,947	SF	$169,639	2010	10		2020
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	DDC		THROUGHOUT	179,947	SF	$90,138	2010	10		2020
FS01	FIRE SPRINKLER SYSTEM - WET		2446		161,947	SF	$2,190,923	1976	80		2056
FS02	FIRE SPRINKLER SYSTEM - DRY	DRY	2519	EXTERIOR SPACES	18,000	SF	$273,260	2005	25		2030
FA01	FIRE ALARM SYSTEM - DEVICES				179,947	SF	$773,418	2010	18		2028
FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		9881435	WEST MDF RM	1	EA	$24,131	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			143,947	SF	$3,574,649	1976	50		2026
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	MID-90S UPDATE			18,000	SF	$446,996	1994	50		2044
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	2005 UPDATE			18,000	SF	$446,996	2005	50		2055

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	MDS-2E	2408, 2361	E1-1 / EXTERIOR	2,000	AMP	$168,411	2012	40		2052
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	MDP-1	1748	140	2,000	AMP	$168,411	2012	40		2052
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RTUB22	1680	W ROOF	5	HP	$3,633	2002	15		DR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RTUA22	1699	W ROOF	5	HP	$3,633	2002	15		DR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-3		NW ROOF	5	HP	$3,633	2005	15		2020
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-2		NW ROOF	5	HP	$3,633	2005	15		2020
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-4		NW ROOF	5	HP	$3,633	2005	15		2020
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-3 RF		NW ROOF	3	HP	$2,180	2005	15		2020
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-2 RF		NW ROOF	3	HP	$2,180	2005	15		2020
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-1 RF		NW ROOF	5	HP	$3,633	2005	15		2020
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-4 RF		NW ROOF	3	HP	$2,180	2005	15		2020
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	PEF-2 VFD		126, OVHD	8	HP	$3,554	2012	15		2027
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-D22	1624	N ROOF	8	HP	$3,554	2002	15		DR
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HVUD-13		126, OVHD	8	HP	$3,554	2012	15		2027
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	PEF-1		126, OVHD	8	HP	$3,554	2012	15		2027
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-B21	1694	W ROOF	8	HP	$3,554	2002	15		DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HVU-1		NW ROOF	8	HP	$4,443	2005	15		2020
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTU-D22	1623	N ROOF	15	HP	$6,433	2002	16		2018
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	HVUD-14		131, OVHD	15	HP	$6,433	2012	16		2028
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTU-B21	1693	W ROOF	15	HP	$6,433	2002	16		2018
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTUA22	9133	W ROOF	15	HP	$6,433	2015	16		2031
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTUB22	1679	W ROOF	20	HP	$7,904	2002	16		2018
LE01	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED STAIRWELL LTS			32	EA	$6,536	2015	15		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	LED ENTRANCE & PERIMETER FIXTURES			50	EA	$25,428	2015	20		2035
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	LED			125,967	SF	$1,414,567	2015	20		2035
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T8 & T5			52,180	SF	$714,876	2005	20		2025
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T12			1,800	SF	$24,660	1976	20	21	DR
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL	OCCUPANCY SENSORS			100,000	SF	$229,655	2017	20		2037
GN04	GENERATOR - DIESEL (200-500 KW)	EMG GEN	9092	SE EXTERIOR	350	KW	$162,669	2012	25		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS 4LS2	9128	E1-1	80	AMP	$4,422	2012	25		2037
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS 4EM	4014	E1-1	200	AMP	$7,941	2012	25		2037

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$40,513,984				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	GLASS, STOREFRONT		1,620	SF	$228,721	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		9,180	SF	$1,661,190	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HM DRS	18	EA	$17,036	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	W/ PANIC HDWR	43	LEAF	$129,957	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ GLASS PANEL	13	LEAF	$26,085	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ COM HDWR	18	LEAF	$36,118	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	W/ PANIC HDWR	22	LEAF	$44,144	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	8X10	160	SF	$16,670	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	21X14	882	SF	$91,896	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	12X16	384	SF	$40,009	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	20X15	3,000	SF	$312,571	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	8X10	2	EA	$4,189	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	21X14	3	EA	$6,284	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	12X16	2	EA	$4,189	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	20X15	10	EA	$20,945	DR
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL	73,000	SF	$1,621,513	DR
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL	BUR	1,600	SF	$96,457	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3010	WALL FINISH - APPLIED, STANDARD	2000	119,670	SF	$334,000	DR
C3020	INTERIOR STAIR TREAD AND LANDING FINISH	1976	3	FLR	$11,806	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2000	6,800	SF	$81,011	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	1976	7,770	SF	$274,022	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	2000	48,590	SF	$169,949	DR
D2010	PLUMBING FIXTURE - LAVATORY, COUNTER	ORIGINAL	20	EA	$17,213	DR
D2010	PLUMBING FIXTURE - LAVATORY, GANG	ORIGINAL	6	EA	$47,629	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL	2	EA	$1,545	DR
D2010	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	ORIGINAL	4	EA	$4,551	DR
D2010	PLUMBING FIXTURE - URINAL	ORIGINAL	12	EA	$12,944	DR
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	ORIGINAL	24	EA	$40,679	DR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH2	50	GAL	$1,658	DR
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	H&V A-13	1	HP	$11,013	DR
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	H&V B-12	5	HP	$52,027	DR
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	H&V A-12	5	HP	$52,027	DR
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	HVUA-11	5	HP	$52,027	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-11 / AHU01	8	HP	$68,049	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-12 / AHU02	8	HP	$68,049	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVUD-13 / AHU126	8	HP	$68,049	DR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	HVUD-14 / AHU126	15	HP	$127,857	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-2 WELDING (NE UNIT)	1,000	MBH	$57,809	DR
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-1 WELDING	1,000	MBH	$57,809	DR
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-1	1,100	MBH	$63,590	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-4	1	EA	$6,899	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RF-B-12	3	HP	$4,161	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RF-A-11	3	HP	$4,161	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	H&V A-12 RF	3	HP	$4,161	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF - SMALL ENGINE	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EEF-1	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	TEF-4	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	TEF-1 (BR EF)	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	TEF-5	3	HP	$15,500	DR
D3040	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	TEF-2	2	HP	$8,073	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	PEF-1	8	HP	$14,406	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	TEF-3	5	HP	$14,406	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-1 WELDING	8	HP	$14,406	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-4 WELDING	8	HP	$14,406	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-3 WELDING	8	HP	$14,406	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-2 WELDING	8	HP	$14,406	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-6 WELDING	8	HP	$14,406	DR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	RTUB22	5	HP	$3,633	DR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	RTUA22	5	HP	$3,633	DR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-D22	8	HP	$3,554	DR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-B21	8	HP	$3,554	DR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T12	1,800	SF	$24,660	DR
				TOTAL DEFERRED RENEWAL COST	**$6,251,779**	

2018

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (>100 GAL)	DWH1	120	GAL	$3,349	2018
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTU-D22	15	HP	$6,433	2018
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	RTU-B21	15	HP	$6,433	2018
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTUB22	20	HP	$7,904	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$24,119**	

2019

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-1	280	MBH	$22,280	2019
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-D22	30	TON	$159,902	2019
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (9-35 TON)	RTU-B21	30	TON	$159,902	2019
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-B22	40	TON	$117,327	2019
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (35-55 TON)	RTU-A22	36	TON	$105,594	2019
2019	**PROJECTED COMPONENT REPLACEMENT COST**				**$565,007**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT	1	EA	$1,050	2020
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-5 WELDING	8	HP	$15,283	2020
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-8 WELDING	8	HP	$15,283	2020
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-7 WELDING	8	HP	$15,283	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-3	5	HP	$3,854	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-2	5	HP	$3,854	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-4	5	HP	$3,854	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-3 RF	3	HP	$2,312	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-2 RF	3	HP	$2,312	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-1 RF	5	HP	$3,854	2020
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HVU-4 RF	3	HP	$2,312	2020

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HVU-1	8	HP	$4,714	2020
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	2000	3,240	SF	$23,656	2020
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUR	59,000	SF	$1,766,695	2020
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	DDC	179,947	SF	$95,628	2020
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	DDC	179,947	SF	$179,970	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$2,139,917**	

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	HVAC DISTRIBUTION NETWORKS - CLASSROOM	ORIGINAL	134,957	SF	$5,246,168	2021
C1020	DOOR - OVERHEAD, INTERIOR	6X4	72	SF	$8,197	2021
C1020	DOOR - OVERHEAD, INTERIOR	12X9	324	SF	$36,888	2021
C1020	DOOR - OVERHEAD, INTERIOR	9X4	36	SF	$4,099	2021
C1020	DOOR - OVERHEAD, INTERIOR	3X3	9	SF	$1,025	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$5,296,376**	

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-2	312	MBH	$27,129	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$27,129**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 3020 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	EVAPORATOR UNIT, NO HEAT (2-3 TON)	ACU1	3	TON	$6,700	2024
C3030	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2000	34,010	SF	$113,342	2024
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2012	40,810	SF	$580,528	2024
C3010	WALL FINISH - APPLIED, STANDARD	2012	89,750	SF	$299,101	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$999,672**	

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CNDR1	3	TON	$8,449	2025
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (413-525 MBH INPUT)	MAU-1 DIESEL	500	MBH	$41,032	2025
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-2 WELDING (N UNIT)	1,000	MBH	$71,098	2025
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T8 & T5	52,180	SF	$879,207	2025
B3020	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	METAL	1,320	SF	$464,584	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,464,370**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

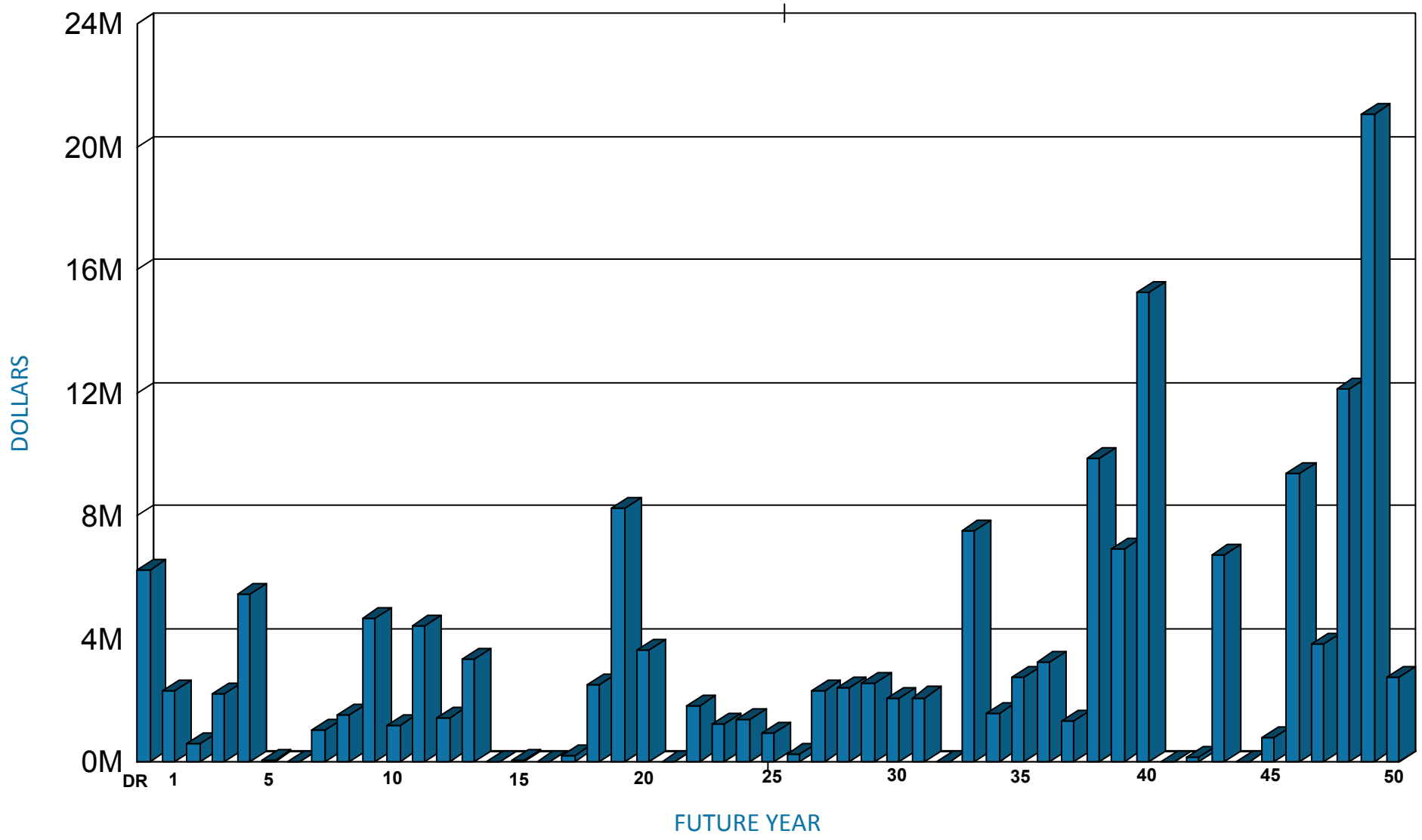
2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL	5	EA	$10,542	2026
D5010	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL	143,947	SF	$4,528,259	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$4,538,800**	

2027

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	PEF-2 VFD	8	HP	$4,638	2027
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HVUD-13	8	HP	$4,638	2027
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	PEF-1	8	HP	$4,638	2027
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2015	13,600	SF	$211,401	2027
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	2017	32,390	SF	$147,815	2027
B2030	DOOR PANIC HARDWARE, EXTERIOR	GM DRS	43	EA	$66,598	2027
B2030	DOOR PANIC HARDWARE, EXTERIOR	HM W/GLASS PANEL	13	EA	$20,134	2027
B2030	DOOR PANIC HARDWARE, EXTERIOR	HM DRS	22	EA	$34,074	2027
B2010	EXTERIOR SURFACE FINISH - APPLIED, STANDARD		4,704	FLR	$17,224	2027
C3010	EXTERIOR WALL FINISH - APPLIED, STANDARD	PAINTED IN RENO	49,200	SF	$361,205	2027
C3010	EXTERIOR WALL FINISH - APPLIED, STANDARD	STAIN WOOD EAVES	5,500	SF	$40,379	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$912,743**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



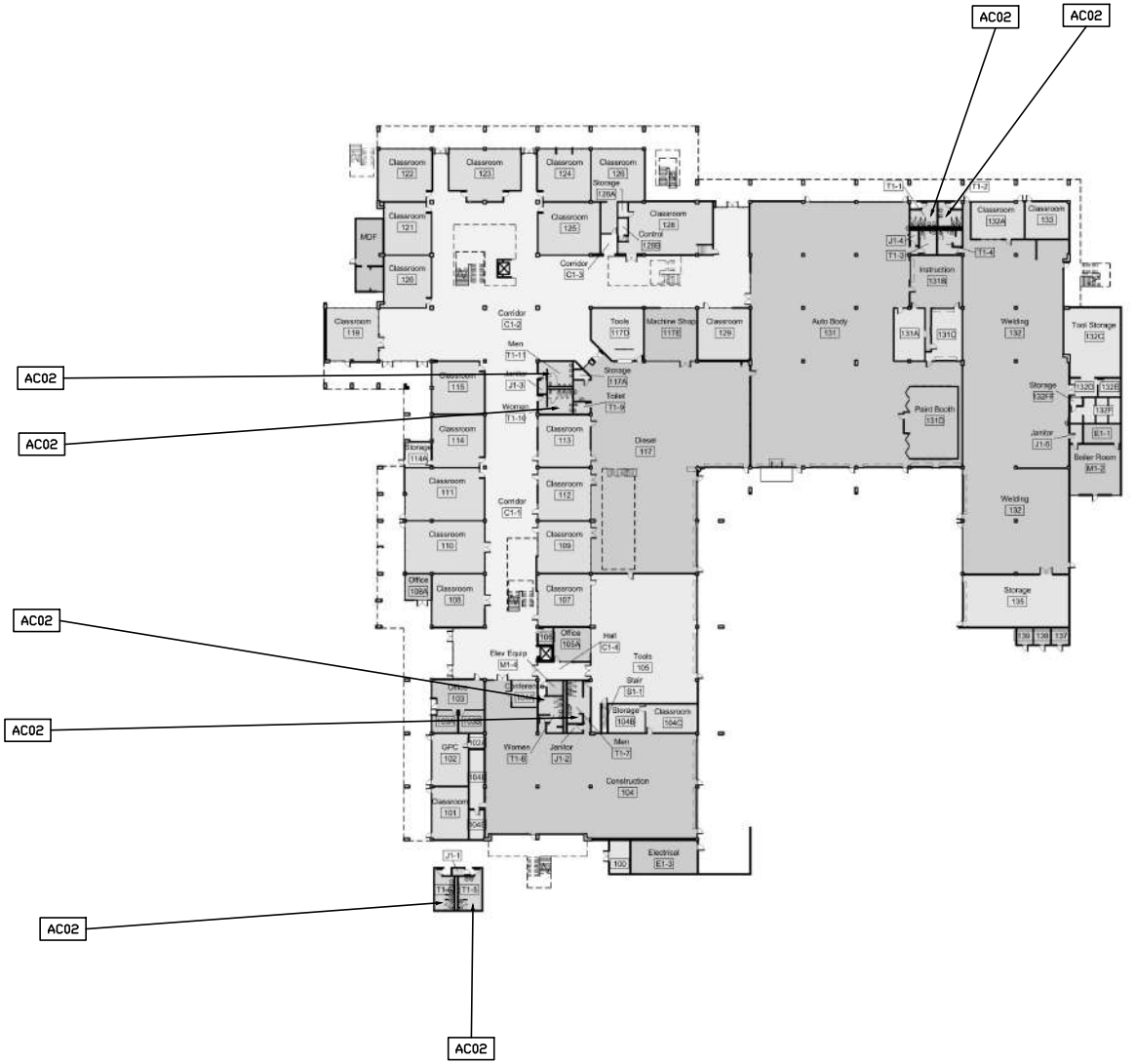
Average Annual Renewal Cost per SF $8.16

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



BUILDING
2

BLDG NO. 3020

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

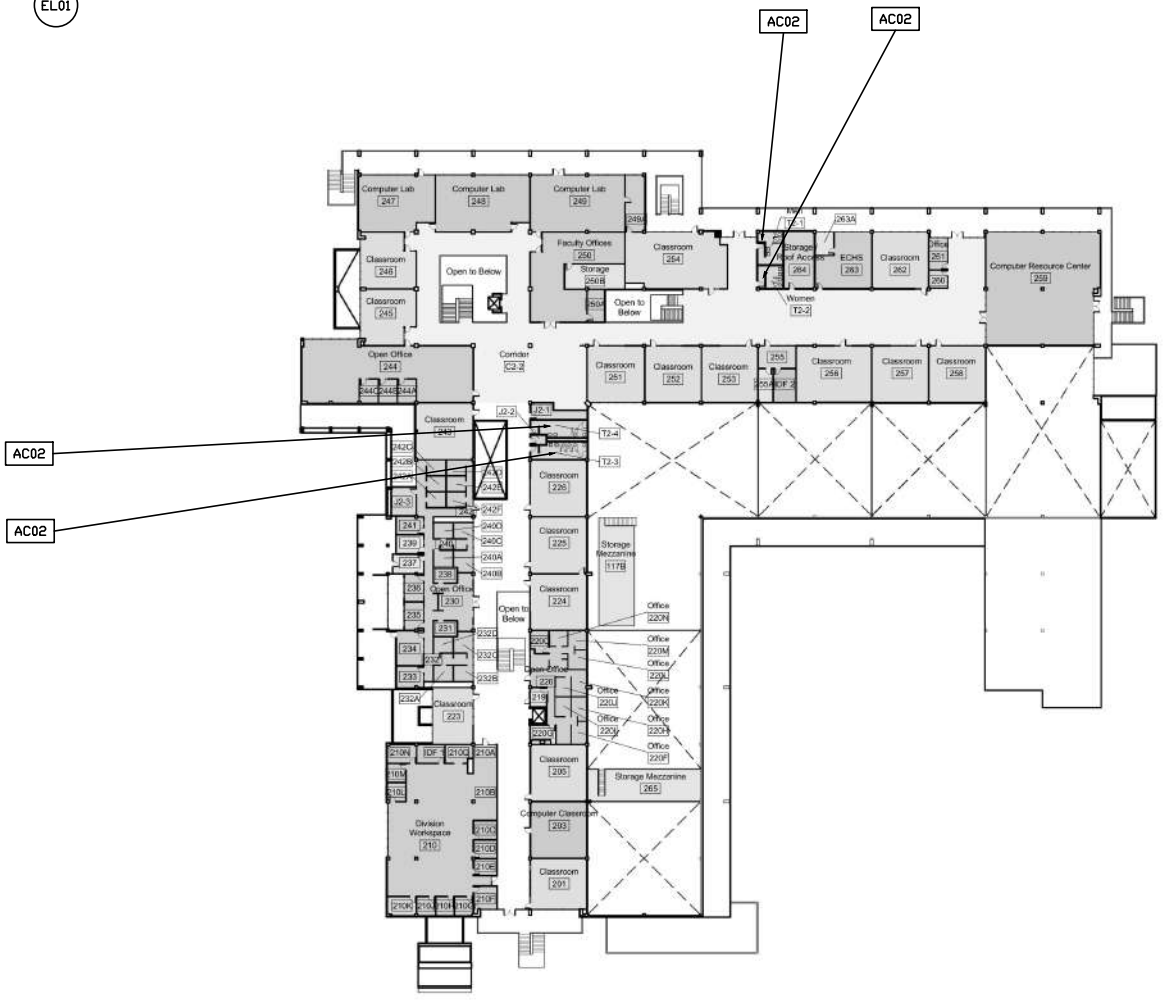
FIRST
FLOOR
PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF

EL01



AC01 AC03 AC04 FS01

BUILDING
2

BLDG NO. 3020

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

3020001a 8/27/2018

Aged BUR

Roof

3020001e 8/27/2018

Original centrifugal exhaust fans

Southeast roof

3020002a 8/27/2018

Aged BUR and standing seam metal

Roof

3020002e 8/27/2018

Typical ceiling-mounted LED light fixture

East side second level entrance

3020003a 8/27/2018

Work yard, painted concrete walls, and aged hollow metal doors

South elevation

3020003e 8/27/2018

Typical VAV reheat unit

Throughout

3020004a 8/27/2018
Noncompliant railing
Exterior stairs

3020004e 8/27/2018
Gas-fired MAUs for shop heating
North roof

3020005a 8/27/2018
Exterior concrete walk, glazing, and applied finished wood eaves
North elevation

3020005e 8/27/2018
Original two-pipe AHU for shop heating
Overhead shops

3020006a 8/27/2018
Aged BUR and fiberglass skylight
Roof

3020006e 8/27/2018
Heating hot water piping for AHU heating coils
Shop overhead AHUs

3020007a 8/27/2018
Aluminum and glass skylight
Roof

3020007e 8/27/2018
Utility-type exhaust fan
North roof

3020008a 8/27/2018
Exterior glazing with solar film
Roof

3020008e 8/27/2018
Original exterior HVAC ducting
North roof

3020009a 8/27/2018
Updated concrete floors and applied finish wood ceilings
Corridor C2-2

3020009e 8/27/2018
VFDs for rooftop package unit
North roof

3020010a 8/27/2018
Carpeted floor, painted walls, and attached ceiling tiles
Room 256

3020010e 8/27/2018
Original utility fan with VFD
Overhead room 126

3020011a 8/27/2018
Nonaccessible drinking fountain
Corridor C2-2

3020011e 8/27/2018
Recently updated package unit
North roof

3020012a 8/27/2018
Noncompliant railing
Interior stair towers

3020012e 8/27/2018
Two-pipe, DX cooled AHUs
Northwest roof

3020013a 8/27/2018
Ceramic tile finishes and wall-mounted lavatories
Restroom

3020013e 8/27/2018
Updated VFD for supply fan of AHU
Northwest roof, AHU1 (HVU-1)

3020014a 8/27/2018
Ceramic tile finishes and standing urinals
Restroom

3020014e 8/27/2018
Secondary electrical panelboard updated in 2005 as part of HVAC modernization effort
West roof

3020015a 8/27/2018
Nonaccessible water closets
Restroom

3020015e 8/27/2018
Ductless DX air-cooled condenser unit
West roof

3020016a 8/27/2018
Noncompliant railings
Corridor C2-2

3020016e 8/27/2018
Original utility fans for general exhaust needs
West roof

3020017a 8/27/2018
Original wood and glass interior doors
Room 247

3020017e 8/27/2018
Original secondary electrical equipment
Room 231

3020018a 8/27/2018
Updated finishes and fixtures
Remodeled restroom

3020018e 8/27/2018
Manual fire extinguisher and fire alert devices
Throughout

3020019a 8/27/2018
Accessible water closet
Remodeled restroom

3020019e 8/27/2018
Glass bulb fire suppression sprinkler head
Throughout

3020020a 8/27/2018
Vinyl tile floor, painted walls, and lay-in acoustical tile ceiling
Room 226

3020020e 8/27/2018
Glass enclosed elevator
Northwest elevator

3020021a 8/27/2018
Exterior painted concrete and wood siding
Southwest corner

3020021e 8/27/2018
Honeywell digital control components updated in 2010
Room 219

3020022a 8/27/2018

Exterior restrooms

South elevation

3020022e 8/27/2018

Instantaneous hot water heater

Room 220G

3020023a 8/27/2018

Exterior concrete walks, glazing, and painted overhead

Southwest corner

3020023e 8/27/2018

LED lighting control switch and air temperature sensors for DDC

Room 205

3020024a 8/27/2018

Aged glass and metal doors with panic hardware

West elevation

3020024e 8/27/2018

Pendant decorative fluorescent light fixtures

Room 210

3020025a 8/27/2018
Exterior painted concrete and wood siding
West elevation

3020025e 8/27/2018
Recessed LED stairway lighting
Exterior stairwells

3020026a 8/27/2018
Exterior painted concrete and wood siding
North elevation

3020026e 8/27/2018
Dry-pipe fire suppression sprinkler piping and heads
Exterior spaces

3020027a 8/27/2018
Exterior painted concrete and wood siding
North elevation

3020027e 8/27/2018
Original two-pipe AHU for space heating
Overhead room 98

3020028a 8/27/2018
Exterior painted concrete and wood siding
East elevation

3020028e 8/27/2018
Wall-mounted LED light fixture
Southwest exterior perimeter

3020029a 8/27/2018
Painted concrete storage
Southeast corner

3020029e 8/27/2018
Two of three air-cooled DX split system condensers
South exterior

3020030a 8/27/2018
Exterior overhead coiling doors
Southeast corner

3020030e 8/27/2018
One of two recently updated main electrical system switchboards
West electrical room 140

3020031a 8/27/2018

Exterior overhead coiling doors and sealed concrete floors

Room 105

3020031e 8/27/2018

Pendant LED light fixtures

Room 104

3020032a 8/27/2018

Sealed concrete finishes

Room 104

3020032e 8/27/2018

Emergency eyewash station

Room 104

3020033a 8/27/2018

Aged gang lavatory

Room 104

3020033e 8/27/2018

Utility exhaust fans for welding area

Room 132

3020034a 8/27/2018
Small overhead coiling door
Room 104

3020034e 8/27/2018
Dry system piping and air compressor
Room 117

3020035a 8/27/2018
Dual-level drinking fountain not properly recessed
Corridor C1-1

3020035e 8/27/2018
3 ton, single-girder overhead crane
Room 117

3020036a 8/27/2018
Carpeted floor, painted walls, and attached ceiling tiles
Room 128

3020036e 8/27/2018
Emergency eyewash and shower combination station
Room 131

3020037a 8/27/2018
Sealed concrete finishes
Room 131

3020037e 8/27/2018
One of two hydraulic elevator controllers and reservoirs
Room 105A

3020038a 8/27/2018
Nonaccessible plumbing fixtures
Room 132F

3020038e 8/27/2018
Diesel-fired emergency generator for Buildings 1, 2, and 6
Southeast exterior

3020039a 8/27/2018
Noncompliant railing
Room 117

3020039e 8/27/2018
Fountain motor and pump updated in 2016
West exterior courtyard

3020040a 8/27/2018

Primary elevation

Southwest corner

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3020
Asset Name	Building 2
Year Built or Last Energy Renovation	2005

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

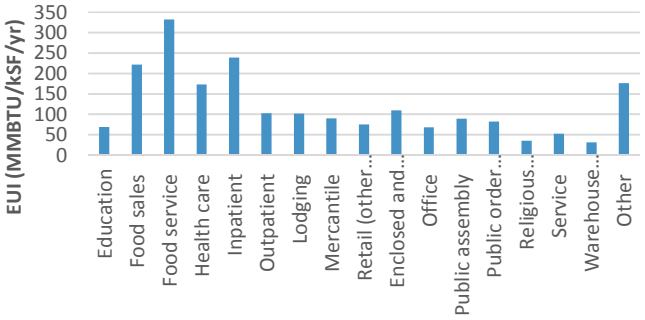
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

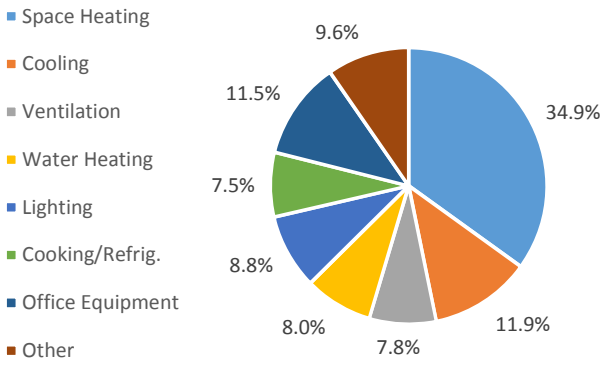


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
HVAC - Air Dist. Network, VAV	INSTALL VARIABLE AIR VOLUME (VAV) SYSTEM. In constant air volume (CAV) systems, more energy is required to heat, cool, and distribute air than in VAV systems. Consider a VAV system to reduce energy consumption, mainly fan energy consumption.	CAP
Electrical - VFDs	INSTALL VARIABLE FREQUENCY DRIVES. Install VFDs on motors greater than 5 hp to reduce energy consumption by varying motor speed based on system demand.	O&M; LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 3

Asset 3030

Inspected August 28, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

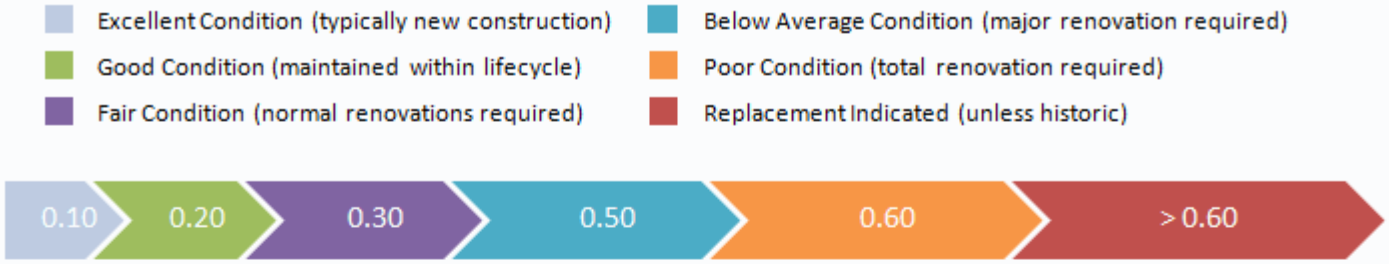
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

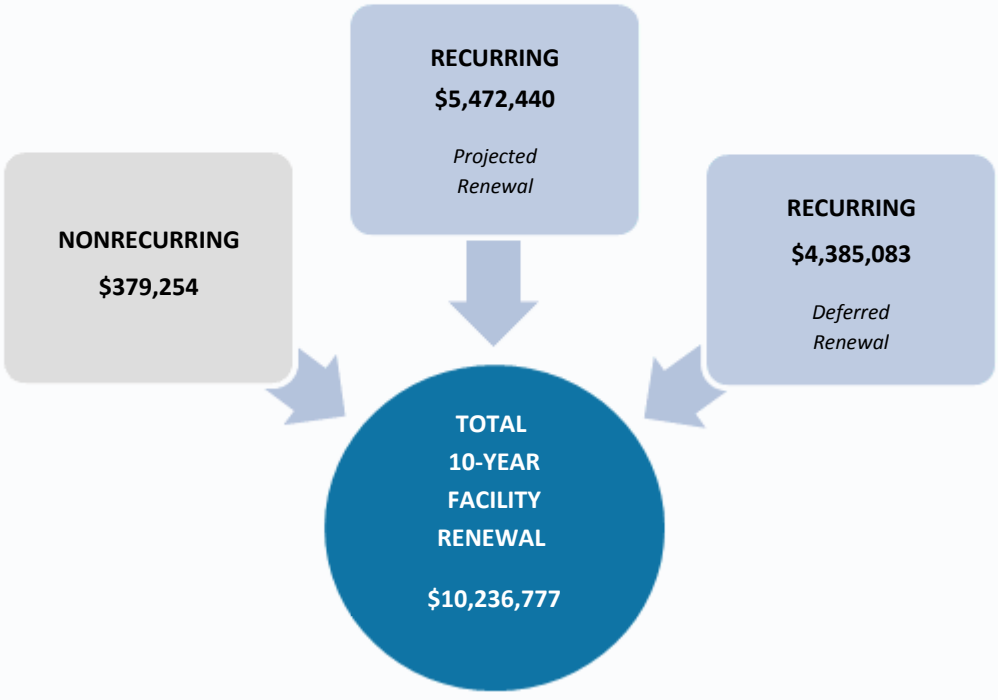
ASSET CODE	3030		
ASSET NAME	BUILDING 3	**CURRENT REPLACEMENT VALUE**	$31,786,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.32
YEAR BUILT	1977	**FACILITY CONDITION INDEX**	0.14
GSF	80,877	**10-YEAR $/SF**	126.57
INSPECTION DATE	08/28/2018		

FCNI Scale

The FCNI for this asset is **0.32**



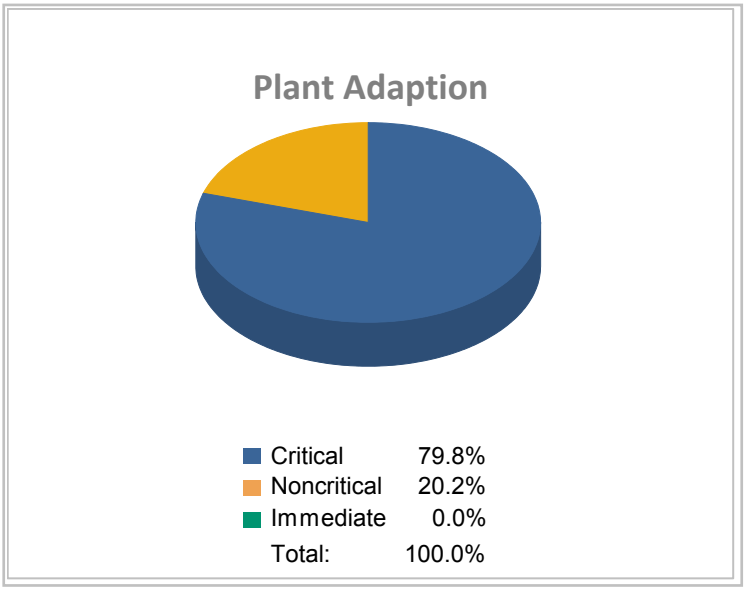
Total Facility Renewal Costs



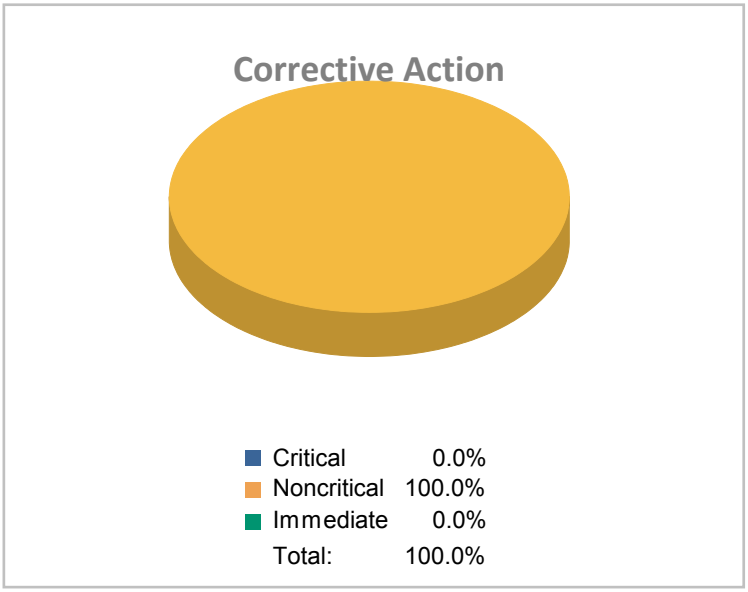
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$258,140**
3 - Noncritical	**$65,378**

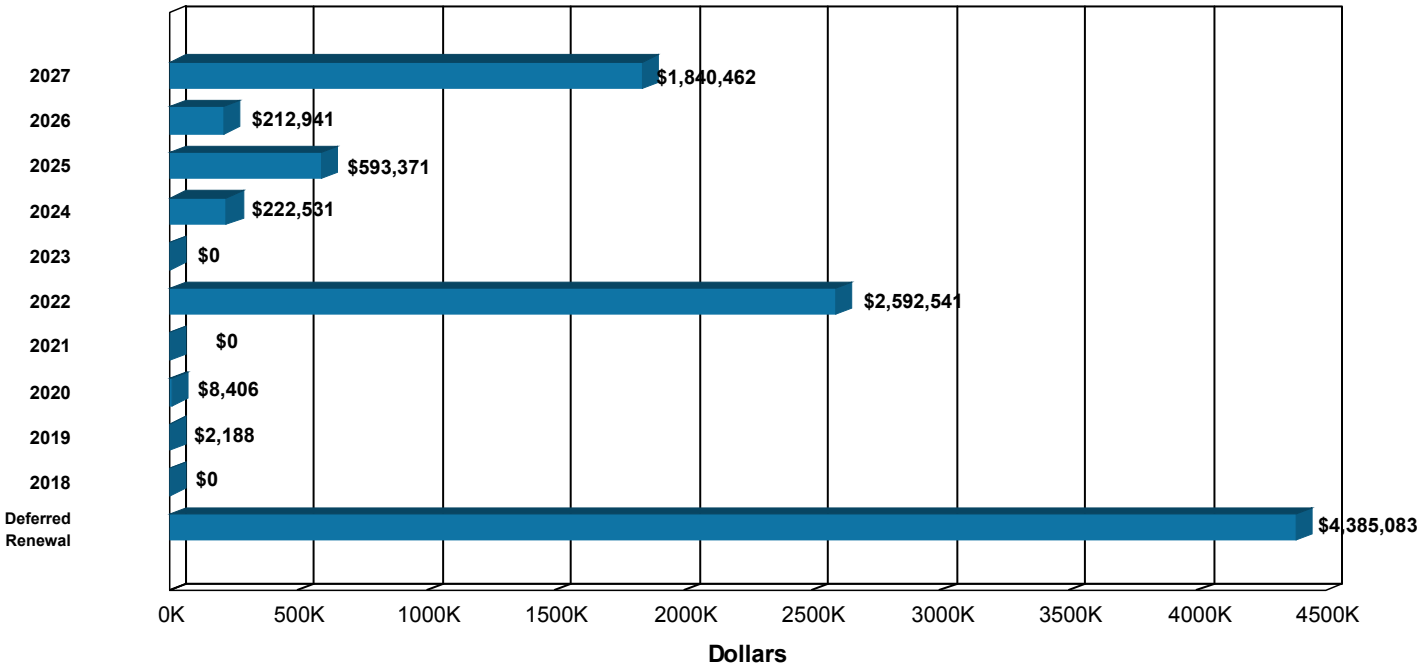


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$55,736**

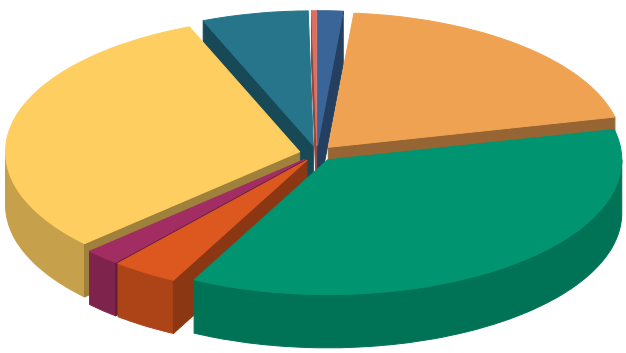


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$147,303	1%
Electrical	$2,031,389	20%
Exterior	$3,716,343	36%
Fire/Life Safety	$371,743	4%
Health	$176,216	2%
HVAC	$3,171,064	31%
Interiors	$605,760	6%
Plumbing	$16,959	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$10,236,777**	

ASSET SUMMARY

Building 3 was constructed in 1977 and is located on the northwestern corner of the Portland Community College Rock Creek campus. The facility contains 80,877 square feet of office and art classroom space on two above-ground levels. The building also contains a 205-seat theater. There are two loft areas on either side of the theater stage with access to additional rooms serving as mechanical spaces. The roof also has two newly constructed penthouses. The building underwent a major renovation in 2016. Three exterior structures, the exterior storage building, the Kiln Yard, and the Straw Bale House, are located on the site.

Information for this report was gathered during an site visit on August 28, 2018.

Site

The landscaping around the building consists of planting beds, mature trees, and grassy lawns. Landscaping appeared to be adequately maintained on this campus and is in good condition. No landscaping site work appears to be needed at this time.

Pedestrian paving systems consist of concrete sidewalks around the perimeter of the building. These concrete surfaces are in good condition and should not require an upgrade within the next 10 years. There is no vehicular paving directly associated with this facility. The Kiln Yard has a metal security fence around 75 percent of the building. This metal fencing was in excellent condition, with no expected upgrades required.

Exterior Structure

The building has several roofing systems, most of which were reported to be original. A flat bituminous system covers most of the main building, with pitched metal roofing around the periphery of the main building, on the exterior storage building, and the Kiln Yard. The Straw Bale House has a green roof. Of these systems, only the standing seam metal roof on the Kiln Yard, which was built in 2016, does not require replacement. The other roof systems are past their useful service lives and should be considered for near-term replacement. While the gutter systems on the exterior storage and Kiln Yard appear to be in good condition, remaining gutter systems associated with the main structure and skylights on both the main roof and exterior storage building should be included in the overall roofing upgrade.

Exterior walls on the main structure are painted stucco and wood siding/paneling, and they were updated during the 2016 renovation. The painted finish remains in good condition and will continue to serve the building through the 10-year scope of this report. The metal-sided penthouses constructed in 2017 and the metal and concrete masonry unit (CMU) finishes on the Kiln Yard are also in good condition. The metal siding on the exterior storage building is believed to date to the original construction and should be considered for renewal. Water damage was noted on the cedar wood walls

at the south entrance. The source of the water intrusion could not be determined. An order of magnitude budget is proposed to investigate the issue and repair both the water intrusion and refinish the wood walls.

The aluminum, single-pane windows, glass doors, and hollow metal doors are generally in poor condition, and replacement is recommended. Replacement windows should retain similar profiles to the originals but incorporate modern, energy-efficient features. Replacement of the window trim is also necessary as part of the overall effort. The entry storefronts are visibly aged and timeworn and have a dated appearance. Replacement of the exterior glass doors and storefronts is recommended to restore the lifecycles of these applications, and improve the overall appearance of the building.

Select glass and metal doors on the northeast corner of the building, hollow metal doors on the penthouse and Kiln Yard, and most exterior hardware are new and in good condition, with no required upgrades. There are two overhead coiling doors. The original garage door on the exterior storage building requires replacement, but the newer metal door in room 112 is in satisfactory condition.

Interior Finishes/Systems

Most of the flooring is either carpet or concrete. Both finishes are in excellent condition, but due to lifecycle concerns, the older carpet that was installed in 2012 and the painted concrete areas should be considered for renewal during the scope of this report. There is a small amount of vinyl tile in select classrooms. Most of the tile was updated in 2012 and is in good condition, but original vinyl tile in a second level storage area should be scheduled for replacement. Remaining finishes include ceramic tile in the restrooms and wood flooring on stages throughout the building. Ceramic tile in the newer single-user restrooms was in excellent condition, but the larger restrooms had what appeared to be original tile. Any future renovations should include the upgrade of restroom finishes and fixtures to meet current ADA requirements. The wood flooring throughout the building is generally in good condition, but the renewal of the back stage and mechanical room wood flooring should be considered during the final years of this report.

Interior walls are mainly painted applications. The applied finishes are in good condition but will require an almost continuous program of renewal to maintain an acceptable interior appearance. Cyclical painting should be considered as a standard approach to maintaining the quality of the interior finishes. Walls last painted in 2012 should be repainted within the next 10 years. Minor repairs should be completed before work begins. Remaining walls include ceramic tile and a small amount of wood paneling. The newer ceramic tile in the single-user restrooms and the wood paneling were installed during the 2016 renovation and are in excellent condition. The remaining ceramic tile walls in the larger restrooms date to the original construction and may need to be replaced as part of recommended restroom renovations.

Ceilings are a combination of suspended tile and painted finishes. These finishes are mostly in good condition. Isolated concerns should be addressed through routine maintenance. Most interior doors are wood and were replaced during recent renovations. All interior doors are in satisfactory condition, with

no recommended projects at this time. While some newer casework has been added in copy rooms and break rooms, most of the classroom casework appears to date to the original construction. This older casework is aged in appearance and function and is recommended for near-term upgrade.

Accessibility

During the 2016 renovation, several areas of the building were bought into compliance with ADA requirements. However, accessibility barriers remain. The following recommendations will serve the dual purpose of restoring deteriorating systems and enhancing accessibility in the building.

Current legislation requires that building amenities be generally accessible to all people. The configuration of the service counter in room 201 and single-level drinking fountains throughout the facility are a barrier to accessibility. A wheelchair-accessible section should be incorporated into the noncompliant service counter. All single-level drinking fountains should be replaced with dual-level units that are properly recessed or protected by cane barriers. The existing dual-level unit on the first floor should also have cane barriers added to the east side.

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The theater has multiple barriers to accessibility. Install transmitter and headphone receiver sets to accommodate individuals who require audible assistance. The ramps and stairs in the theater also lack supportive handrails. It is recommended that compliant, wall-mounted handrails be installed.

Although there are ADA-compliant, single-user restrooms available in the building, only two of the six main restrooms meet ADA specifications, and all six of the larger restrooms have aged interior finishes. In conjunction with recommended restroom finish upgrades, modify four of the noncompliant restrooms to meet current ADA requirements.

Current legislation regarding building accessibility by the handicapped requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle), and they must be at least 42 inches high. Although the handrails and guardrails are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient relative to current standards. Future renovation efforts should include comprehensive railing upgrades.

Health

No testing for asbestos-containing material (ACM) was performed as part of this assessment, and no information was provided by Portland Community College as to the presence of lead-based paints or ACM. However, based on the ages of the building and equipment, insulation on facility piping and mechanical equipment may contain hazardous material. An allowance for abatement is included for proposed renovations of the affected systems.

Room 109 has an emergency eyewash safety station. The equipment is tested regularly and is in good condition. No replacement is anticipated.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The Silent Knight addressable fire alarm control panel (FACP) is located in room B120. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on normal life expectancies and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also fully protected by an automated fire suppression system with both fusible link and frangible glass bulb sprinkler heads. The relatively long-lived system appears to be in good condition and is anticipated to provide reliable service beyond the scope of this report, given the completion of normal testing, inspection, and maintenance as required per NFPA 25.

HVAC

Primary sources of heating, cooling, and ventilation are provided by air handling units (AHUs), DX split systems, variable air volume (VAV) reheat boxes, ductwork, and a Honeywell direct digital control (DDC) system. The terminal assembly components of the DDC should provide approximately 20 years of service. However, software, field panel, and instrumentation DDC components have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns, and they should be replaced. Updating these specific elements of the DDC should enhance facility maintenance and energy efficiencies and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set-points where not already employed.

Boilers in Building 2 generate heating hot water for this building. The heating medium is distributed and circulated to the AHU heating coils and hydronic heating units by heating hot water pumps. Two recently installed, variable volume, four-pipe AHUs in the penthouse provide the bulk of facility conditioned tempered air using chilled water that is generated and distributed from a screw-type, air-cooled chiller and media pumps located at the northwest exterior of the building. Five original, constant volume AHUs address the stage area, studio spaces, and some common corridors. A single ductless DX air-cooled condenser with three remote evaporator units provides supplemental HVAC to confined IT spaces. All equipment appears to be in working order. However, the original AHUs and related

distribution components are worn and/or obsolete and should be considered for replacement. Where HVAC related equipment has been updated, such as the penthouse, local distribution components were replaced and account for approximately 10 percent of the distribution system in the building.

Multiple rooftop centrifugal and utility-type exhaust fans address facility exhaust needs. These units serve restrooms, mechanical spaces, classrooms/studios, and general exhaust requirements. Many of these fans are original and due for replacement. Modernization will ensure lower energy and maintenance costs while maximizing future equipment operational availability.

Electrical

Electrical power from a utility-owned 500 kVA transformer is fed to the main switchboard on the first floor. The 277/480 volt Square D switchboard has a rated capacity of 1,600 amps and was modernized in 2017. Power is then fed to the secondary electrical distribution network using three step-down, dry-type transformers to provide 120/208 volt power where required. The majority of the secondary network is comprised of original Square D electrical panelboards, but approximately 10 percent of the system was updated in 2016. The original secondary electrical components are outdated and likely obsolete. Replacement is recommended.

Lighting throughout the facility consists of LED, T8, CFL, and a few remaining T12 fixtures. Wall-mounted non-HID fixtures illuminate the exterior perimeter. Although the inspection was performed in the daylight, the current lighting scheme seemed to address the majority of the sensible lighting opportunities. The majority of the lighting was updated within the last three years. Typical lifecycle expectations, obsolescence, and the wide availability of LED lighting technology, promote replacement of all remaining non-LED lighting, with the exception of T8 lighting in the penthouse areas. As part of any lighting effort, ensure applicable building energy codes and standards are incorporated.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve the AHUs and media pumps in the penthouse space and should provide reliable service over the next 10 years.

Emergency electrical service for this building is fed through two automatic transfer switches. The switches provide power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed throughout this facility by rigid copper piping. Where observed, sanitary waste, vent, and stormwater piping is of cast-iron construction. Both the supply and drain piping networks are original but appear to be in working condition, with no issues noted by facility personnel. The piping should continue to provide adequate service over the reporting timeline.

Three residential, electric water heaters generate domestic hot water. Based on normal life expectancies, the two older units should be planned for replacement within the next few years. There

are two backflow preventer valves for the fire suppression and domestic water systems. The preventer valves protect the public water system from cross contamination and generally have a 20-year lifecycle if tested and maintained properly. The valves are presumably in good working order, with no issues noted by facility personnel. Facility support equipment, such as two individual sump pump stations and a utility air compressor, were also noted. This equipment is less than 10 years old and in working condition. No replacements are anticipated over the reporting tenure.

Plumbing fixtures in this building consist of a dual-level drinking fountain, tankless water closets, urinals, lavatories, kitchen sinks, and janitor sinks. Most fixtures were recently replaced and are in excellent condition. Except for the older kitchen sinks, the recently upgraded fixtures will continue to serve the building well through the 10-year scope of this report.

Vertical Transportation

A hydraulic passenger elevator with a glass-enclosed cab serves the facility. The unit has a 3,500 pound capacity and transits two floors. ThyssenKrupp modernized the majority of the elevator components in 2003 with MCE controller components. A half-ton crane installed in 2017 serves the exterior Kiln Yard building. While detailed elevator and crane testing and inspection are not included in this assessment effort, the systems observed were or appeared to be in working condition and operating properly on the day of the inspection. No modernization is anticipated over the next 10 years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 28, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	81,925	65,378	0	0	0	0	0	0	0	0	0	0	0	$147,303
EXTERIOR	0	0	55,736	3,660,608	0	0	0	0	0	0	0	0	0	0	$3,716,343
INTERIOR	0	0	0	256,344	0	0	0	0	0	0	222,531	0	96,184	30,701	$605,760
PLUMBING	0	0	0	6,365	0	2,188	8,406	0	0	0	0	0	0	0	$16,959
HVAC	0	0	0	461,766	0	0	0	0	2,592,541	0	0	0	116,757	0	$3,171,064
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	371,743	0	0	$371,743
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	221,628	0	1,809,761	$2,031,389
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	176,216	0	0	0	0	0	0	0	0	0	0	0	0	$176,216
SUBTOTAL	$0	$258,140	$121,114	$4,385,083	$0	$2,188	$8,406	$0	$2,592,541	$0	$222,531	$593,371	$212,941	$1,840,462	$10,236,777
TOTAL NONRECURRING PROJECT NEEDS			$379,254	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$9,857,523	

CURRENT REPLACEMENT VALUE	$31,786,000
FACILITY CONDITION NEEDS INDEX	0.32
FACILITY CONDITION INDEX	0.14

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
80,877	$10,236,777	$126.57

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$147,303	$0	$147,303
EXTERIOR	$55,736	$3,660,608	$3,716,343
INTERIOR	$0	$605,760	$605,760
PLUMBING	$0	$16,959	$16,959
HVAC	$0	$3,171,064	$3,171,064
FIRE/LIFE SAFETY	$0	$371,743	$371,743
ELECTRICAL	$0	$2,031,389	$2,031,389
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$176,216	$0	$176,216
TOTALS	**$379,254**	**$9,857,523**	**$10,236,777**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3030AC02	THEATER ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	14,198
3030AC03	RESTROOM ACCESSIBILITY UPGRADES	D2010	2	Plant Adaption	67,727
3030HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	2	Plant Adaption	176,216
3030ES01	RESTORE WOOD FINISHES	B1010	3	Corrective Action	55,736
3030AC01	INTERIOR AMENITY ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	24,747
3030AC04	INTERIOR STAIR AND RAILING UPGRADES	C2020	3	Plant Adaption	40,631
				TOTAL	**$379,254**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3030	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED			EXT STORAGE	B2010	Deferred Renewal	19,657
3030	WN05	GLASS, STOREFRONT				B2010	Deferred Renewal	146,833
3030	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				B2020	Deferred Renewal	1,693,762
3030	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ORIG, W/ COM HDWR			B2030	Deferred Renewal	15,111
3030	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ORIG, W/ PANIC HDWR			B2030	Deferred Renewal	75,556
3030	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ COM HDWR			B2030	Deferred Renewal	22,072
3030	DR20	DOOR, EXTERIOR, OVERHEAD PANEL OR SECTIONAL, PAINTED, LOCK			EXT STORAGE	B2030	Deferred Renewal	4,528
3030	DR31	DOOR OPERATOR, OVERHEAD PANEL DOOR, RESIDENTIAL, PADS	EXT STORAGE			B2030	Deferred Renewal	893
3030	RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH			MAIN BLDG	B3010	Deferred Renewal	525,544
3030	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			EXT STORAGE	B3010	Deferred Renewal	15,598
3030	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			MAIN BLDG	B3010	Deferred Renewal	500,059
3030	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	METAL			B3010	Deferred Renewal	23,289
3030	RR27	ROOF - GREEN COVERING OVER MEMBRANE			STRAW BALE HOUSE	B3010	Deferred Renewal	15,292
3030	RR23	ROOF SKYLIGHT - PLASTIC DOME			EXT STORAGE	B3020	Deferred Renewal	1,448
3030	RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	BUR			B3020	Deferred Renewal	600,964

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3030	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			CLRMS	C1030	Deferred Renewal	151,438
3030	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			STOR M2-02	C3020	Deferred Renewal	1,927
3030	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			MAIN RRS	C3020	Deferred Renewal	102,979
3030	FX04	PLUMBING FIXTURE - SINK, KITCHEN	1997			D2010	Deferred Renewal	4,635
3030	WH21	WATER HEATER - RESIDENTIAL, ELECTRIC (<=15 GAL)	DWH1	2042	120	D2020	Deferred Renewal	1,730
3030	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B1	2005	MECH RM, NEAR RM 170	D3040	Deferred Renewal	53,427
3030	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B2	2004	MECH RM, NEAR RM 170	D3040	Deferred Renewal	53,427
3030	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B3	2082	114, OVHD, STG A	D3040	Deferred Renewal	66,924
3030	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B4	2085	114, OVHD, STG A	D3040	Deferred Renewal	66,924
3030	AH17	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	PACE AHU	1583	ROOF	D3040	Deferred Renewal	128,478
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-1	1579	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-2	1572	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-3	1582	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-4	1570	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-5	1576	ROOF	D3040	Deferred Renewal	6,899

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-6	1575	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-7	1573	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-8	1574	ROOF	D3040	Deferred Renewal	6,899
3030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-9	1571	ROOF	D3040	Deferred Renewal	6,899
3030	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4 CERAMICS		126	D3040	Deferred Renewal	1,321
3030	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF	2099	E1-02	D3040	Deferred Renewal	1,321
3030	FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	HVU-2B1 RF		MECH RM, NEAR RM 170	D3040	Deferred Renewal	13,926
3030	FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	HVU-2B2 RF		MECH RM, NEAR RM 170	D3040	Deferred Renewal	13,926
3030	WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH2	2051	110	D2020	2019	2,188
3030	BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	2009	107	D2020	2020	8,406
3030	HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	ORIGINAL			D3040	2022	2,592,541
3030	IW01	WALL FINISH - APPLIED, STANDARD	2012			C3010	2024	111,975
3030	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2012			C3020	2024	110,556
3030	FA01	FIRE ALARM SYSTEM - DEVICES		9881698	B120	D4030	2025	347,612
3030	FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		9881698	B120	D4030	2025	24,131

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3030	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T8 LTG		THROUGHOUT	D5020	2025	221,628
3030	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			CRDRS, CLRMS	C3020	2026	96,184
3030	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	UPDATED DDC		THROUGHOUT	D3060	2026	76,244
3030	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	UPDATED DDC		THROUGHOUT	D3060	2026	40,513
3030	IF10	FLOORING - HARDWOOD STRIP, STANDARD			MECH RMS	C3020	2027	13,865
3030	IF10	FLOORING - HARDWOOD STRIP, STANDARD	MASONITE, PLYWD		BACKSTAGE	C3020	2027	16,836
3030	SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			D5010	2027	1,809,761
							TOTAL	**$9,857,523**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
6	3030ES01	RESTORE WOOD FINISHES	3	$55,736
		TOTAL FOR CORRECTIVE ACTION		**$55,736**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	3030HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	2	$176,216
2	3030AC03	RESTROOM ACCESSIBILITY UPGRADES	2	$67,727
3	3030AC02	THEATER ACCESSIBILITY UPGRADES	2	$14,198
4	3030AC01	INTERIOR AMENITY ACCESSIBILITY UPGRADES	3	$24,747
5	3030AC04	INTERIOR STAIR AND RAILING UPGRADES	3	$40,631
		TOTAL FOR PLANT ADAPTION		**$323,519**
		GRAND TOTAL:		**$379,254**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	3030AC03	2	Plant Adaption	RESTROOM ACCESSIBILITY UPGRADES	$67,727
3	3030AC02	2	Plant Adaption	THEATER ACCESSIBILITY UPGRADES	$14,198
4	3030AC01	3	Plant Adaption	INTERIOR AMENITY ACCESSIBILITY UPGRADES	$24,747
5	3030AC04	3	Plant Adaption	INTERIOR STAIR AND RAILING UPGRADES	$40,631
				TOTAL FOR ACCESSIBILITY	**$147,303**
6	3030ES01	3	Corrective Action	RESTORE WOOD FINISHES	$55,736
				TOTAL FOR EXTERIOR	**$55,736**
1	3030HE01	2	Plant Adaption	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	$176,216
				TOTAL FOR HEALTH	**$176,216**
				GRAND TOTAL:	**$379,254**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	3030HE01	**Category Code:** HE6B	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	8/28/2018	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1,2
OSHA	29 CFR 1910.1001, 1926.1101		

Description

Asbestos may be present on utility piping. Prior to future renovation of these systems, discovered asbestos will have to be properly removed from the utility networks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from utility piping	SF	72,877	$0.23	$16,762	$0.59	$42,997	$59,759
Plumbing system - abate asbestos from supply piping network	SF	80,877	$0.23	$18,602	$0.59	$47,717	$66,319
Base Material/Labor Costs				**$35,363**		**$90,715**	
Indexed Material/Labor Costs				**$35,151**		**$91,441**	**$126,592**
Construction Mark Up at 20.0%							**$25,318**
Original Construction Cost							**$151,910**
Date of Original Estimate: 8/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$151,910**
Professional Fees at 16.0%							**$24,306**
TOTAL PROJECT COST							**$176,216**

All costs shown as Present Value

RESTROOM ACCESSIBILITY UPGRADES

Project Number:	3030AC03	**Category Code:** AC3E	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/28/2018	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309, 604, 605, 606, 607, 608	Not Applicable	Room Only: Floor(s) 1,2

Description

Although there are ADA-compliant, single-user restrooms available in the building, only two of the six main restrooms meet ADA specifications, and all six of the larger restrooms have aged interior finishes. In conjunction with recommended restroom finish upgrades, modify four of the noncompliant restrooms to meet current ADA requirements.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Door operator, signage, and controls	EA	4	$3,841	$15,363	$1,037	$4,150	$19,513
Grab bars (per stall)	SYS	4	$180	$721	$424	$1,698	$2,419
Mirror	EA	4	$371	$1,485	$285	$1,141	$2,626
ADA-compliant signage	EA	4	$67.64	$271	$19.89	$80	$350
ADA-compliant lavatory	EA	4	$783	$3,132	$292	$1,166	$4,298
ADA-compliant toilet	EA	4	$1,230	$4,920	$325	$1,300	$6,220
High density polymer toilet partition modification	EA	4	$2,056	$8,223	$1,273	$5,093	$13,316
			Base Material/Labor Costs	**$34,115**		**$14,627**	
			Indexed Material/Labor Costs	**$33,910**		**$14,744**	**$48,654**
					Construction Mark Up at 20.0%		**$9,731**
					Original Construction Cost		**$58,385**
Date of Original Estimate:	8/28/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$58,385**
					Professional Fees at 16.0%		**$9,342**
					TOTAL PROJECT COST		**$67,727**

All costs shown as Present Value

THEATER ACCESSIBILITY UPGRADES

Project Number:	3030AC02	**Category Code:** AC4A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	8/28/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	219.3, 706.1	Not Applicable	Room Only: Floor(s) 1

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The theater has multiple barriers to accessibility. Install transmitter and headphone receiver sets to accommodate individuals who require audible assistance. The ramps and stairs in the theater also lack supportive handrails. It is recommended that compliant, wall-mounted handrails be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Infrared transmitter and headphone receiver sets	SYS	1	$1,936	$1,936	$1,698	$1,698	$3,634
Wall-mounted handrail system, painted (15 feet minimum)	LF	60	$64.33	$3,860	$45.09	$2,705	$6,565
			Base Material/Labor Costs	**$5,796**		**$4,403**	
			Indexed Material/Labor Costs	**$5,761**		**$4,438**	**$10,200**
					Construction Mark Up at 20.0%		**$2,040**
					Original Construction Cost		**$12,240**
Date of Original Estimate: 8/28/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$12,240**
					Professional Fees at 16.0%		**$1,958**
					TOTAL PROJECT COST		**$14,198**

All costs shown as Present Value

INTERIOR AMENITY ACCESSIBILITY UPGRADES

Project Number:	3030AC01	**Category Code:** AC4A	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	8/28/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602, 804	Not Applicable	Item Only: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all people. The configuration of the service counter in room 201 and single-level drinking fountains throughout the facility are a barrier to accessibility. A wheelchair-accessible section should be incorporated into the noncompliant service counter. All single-level drinking fountains should be replaced with dual-level units that are properly recessed or protected by cane barriers. The existing dual-level unit on the first floor should also have cane barriers added to the east side.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	2	$1,549	$3,098	$476	$952	$4,051
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	3	$932	$2,797	$3,321	$9,964	$12,761
ADA-compliant service counter	LF	3	$199	$597	$106	$318	$915
			Base Material/Labor Costs	**$6,492**		**$11,235**	
			Indexed Material/Labor Costs	**$6,453**		**$11,325**	**$17,778**
					Construction Mark Up at 20.0%		**$3,556**
					Original Construction Cost		**$21,334**
Date of Original Estimate:	8/28/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$21,334**
					Professional Fees at 16.0%		**$3,413**
					TOTAL PROJECT COST		**$24,747**

All costs shown as Present Value

INTERIOR STAIR AND RAILING UPGRADES

Project Number:	3030AC04
Priority Sequence:	5
Priority Class:	Noncritical
Project Class:	Plant Adaption
Date Basis:	8/28/2018

Category Code: AC3B

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 2
ADAAG	505		

Description

Current legislation regarding building accessibility by the handicapped requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the handrails and guardrails are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient relative to current standards. Future renovation efforts should include comprehensive railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	1	$729	$729	$663	$663	$1,393
Switchback handrail/guardrail system per floor	FLR	1	$1,653	$1,653	$1,061	$1,061	$2,714
Railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	300	$45.53	$13,659	$38.05	$11,415	$25,074
			Base Material/Labor Costs	**$16,041**		**$13,139**	
			Indexed Material/Labor Costs	**$15,945**		**$13,244**	**$29,189**
					Construction Mark Up at 20.0%		**$5,838**
					Original Construction Cost		**$35,027**
Date of Original Estimate:	8/28/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$35,027**
					Professional Fees at 16.0%		**$5,604**
					TOTAL PROJECT COST		**$40,631**

All costs shown as Present Value

RESTORE WOOD FINISHES

Project Number:	3030ES01	**Category Code:** ES2A	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	8/28/2018	**Element:**	STRUCTURE

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Area Wide: Floor(s) 2

Description

Cedar wood walls at the south exit have significant water damage. The source of the water could not be determined, but an order of magnitude budget is proposed to investigate the issue and repair both the water intrusion and refinish the wood walls.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Investigate leak and repair damaged walls	LOT	1	$20,000	$20,000	$20,000	$20,000	$40,000
Base Material/Labor Costs				**$20,000**		**$20,000**	
Indexed Material/Labor Costs				**$19,880**		**$20,160**	**$40,040**
Construction Mark Up at 20.0%							**$8,008**
Original Construction Cost							**$48,048**
Date of Original Estimate: 8/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$48,048**
Professional Fees at 16.0%							**$7,688**
TOTAL PROJECT COST							**$55,736**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED			EXT STORAGE	1,290	SF	$19,657	1977	30	10	DR
EW08	WALL, EXTERIOR, SIDING, T-111 PLYWOOD			UPPER LVL	17,140	SF	$231,567	2016	25		2041
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION			PTHS	3,130	SF	$73,971	2017	25		2042
WN05	GLASS, STOREFRONT				1,040	SF	$146,833	1977	40		DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				9,360	SF	$1,693,762	1977	40		DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ORIG, W/ PANIC HDWR			25	LEAF	$75,556	1977	25	15	DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ORIG, W/ COM HDWR			5	LEAF	$15,111	1977	25	15	DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	UPDATED, W/ PANIC HDWR			6	LEAF	$18,133	2016	25		2041
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ COM HDWR			11	LEAF	$22,072	1977	40		DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	UPDATED, W/ COM HDWR			4	LEAF	$8,026	2017	40		2057
DR13	DOOR AND FRAME, EXTERIOR, SWINGING, SCREEN, LOCK			KILN YARD	2	LEAF	$2,252	2016	35		2051
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	METAL COM		112	156	SF	$16,254	2016	30		2046
DR20	DOOR, EXTERIOR, OVERHEAD PANEL OR SECTIONAL, PAINTED, LOCK			EXT STORAGE	72	SF	$4,528	1977	20	20	DR
DR28	DOOR OPERATOR, POWER-ASSIST	INT DRS W/ COM HDWR			8	EA	$54,162	2016	20		2036
DR28	DOOR OPERATOR, POWER-ASSIST	EXT GM W/ PANIC HDWR			3	EA	$20,311	2016	20		2036
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	METAL COM			1	EA	$2,095	2016	30		2046

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR31	DOOR OPERATOR, OVERHEAD PANEL DOOR, RESIDENTIAL, PADS	EXT STORAGE			1	EA	$893	1977	20	20	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	2016 HM			11	EA	$10,411	2016	12		2028
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	2017 HM			4	EA	$3,786	2017	12		2029
DR36	DOOR PANIC HARDWARE, EXTERIOR	GM W/ PANIC			36	EA	$42,733	2016	12		2028
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH			MAIN BLDG	28,998	SF	$525,544	1977	20	20	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			MAIN BLDG	23,413	SF	$500,059	1977	40		DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			EXT STORAGE	537	SF	$15,598	1977	40		DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			KILN YARD	752	SF	$21,843	2016	40		2056
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	METAL			1,220	LF	$23,289	1977	20	20	DR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			EXT STORAGE	190	LF	$3,627	2016	20		2036
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			KILN YARD	220	LF	$4,200	2016	20		2036
RR27	ROOF - GREEN COVERING OVER MEMBRANE			STRAW BALE HOUSE	107	SF	$15,292	1977	20	20	DR
RR23	ROOF SKYLIGHT - PLASTIC DOME			EXT STORAGE	8	SF	$1,448	1977	20	20	DR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	BUR			2,100	SF	$600,964	1977	35	5	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	ORIG, W/ COM HDWR		OFFICES	20	LEAF	$44,229	1977	60		2037
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	UPDATED, W/ COM HDWR		OFFICES	35	LEAF	$77,400	2016	60		2076

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	UPDATED, W/ PANIC HDWR			6	LEAF	$22,011	2016	60		2076
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ PANIC HDWR			13	LEAF	$47,691	1977	60		2037
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	UPDATED, W/ COM HDWR			34	LEAF	$124,730	2016	60		2076
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ COM HDWR			20	LEAF	$73,371	1977	60		2037
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	W/ SEC HDWR			7	LEAF	$25,680	2016	60		2076
DR04	DOOR, SLIDING SYSTEM, INTERIOR				2	EA	$36,798	2016	25		2041
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR			OFFICES	55	EA	$41,409	2016	35		2051
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				54	EA	$40,657	2016	35		2051
DR26	DOOR PANIC HARDWARE, INTERIOR				19	EA	$22,552	2016	30		2046
DR27	DOOR LOCK, SECURITY, INTERIOR				7	EA	$10,242	2016	25		2041
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			CLRMS	270	LF	$151,438	1977	30	10	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BRK RM, COPY RM	30	LF	$16,826	2016	30		2046
SF01	SEATING, FIXED, FOLDING, STANDARD	FORUM 114			205	EA	$72,287	2005	40		2045
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	CONCRETE & BRD			36,855	SF	$207,372	2016	12		2028
IW01	WALL FINISH - APPLIED, STANDARD	2016			93,610	SF	$261,266	2016	12		2028
IW01	WALL FINISH - APPLIED, STANDARD	2012			40,120	SF	$111,975	2012	12		2024

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			SINGLE USER RRS	1,080	SF	$43,742	2016	60		2076
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			MAIN RRS	6,110	SF	$247,465	1977	60		2037
IW08	WALL FINISH - WOOD PANEL, STANDARD				2,880	SF	$60,054	2016	40		2056
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2016			21,650	SF	$257,924	2016	12		2028
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2012			9,280	SF	$110,556	2012	12		2024
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			SELECT CLSRM, BRK RM	5,230	SF	$35,993	2012	20		2032
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			STOR M2-02	280	SF	$1,927	1977	20	20	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			SINGLE USER RRS	520	SF	$18,339	2016	40		2056
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			MAIN RRS	2,920	SF	$102,979	1977	40		DR
IF10	FLOORING - HARDWOOD STRIP, STANDARD	MASONITE, PLYWD		BACKSTAGE	1,240	SF	$16,836	1977	50		2027
IF10	FLOORING - HARDWOOD STRIP, STANDARD			MECH RMS	1,240	SF	$13,865	1977	50		2027
IF10	FLOORING - HARDWOOD STRIP, STANDARD			MAIN STAGE, LBY	280	SF	$5,591	2016	50		2066
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			CRDRS, CLRMS	27,500	SF	$96,184	2016	10		2026
IF26	INTERIOR STAIR TREAD AND LANDING FINISH				1	FLR	$3,935	2016	15		2031
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				30,940	SF	$344,368	2016	45		2061
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				37,810	SF	$105,528	2016	24		2040

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
CN01	BRIDGE CRANE, 1 GIRDER, 20' SPAN <= 4 TON	KILN CRANE		NW EXTERIOR KILN BLDG	1	TON	$9,101	2017	60		2077
CN23	BRIDGE CRANE RAIL	KILN CRANE		NW EXTERIOR KILN BLDG	8	LF	$291	2017	60		2077
CN24	BRIDGE CRANE CONTROLS <13 TON	KILN CRANE		NW EXTERIOR KILN BLDG	1	TON	$935	2017	20		2037
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	4381	M101	1	EA	$335,379	2003	25		2028
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	$2,694	2016	25		2041
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				21	EA	$28,374	2016	35		2051
FX04	PLUMBING FIXTURE - SINK, KITCHEN	1997			6	EA	$4,635	1997	20		DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2016			21	EA	$16,224	2016	20		2036
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	$4,993	2016	50		2066
FX10	PLUMBING FIXTURE - URINAL				9	EA	$9,708	1997	35		2032
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				24	EA	$40,679	2016	35		2051
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			109	1	EA	$1,080	2005	35		2040
BF02	BACKFLOW PREVENTER (1-2 INCHES)	DW BFP	2011	107	1	EA	$2,235	2016	20		2036
BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	2009	107	1	EA	$8,406	2000	20		2020
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				80,877	SF	$926,114	1977	50	2	2029
WH21	WATER HEATER - RESIDENTIAL, ELECTRIC (<=15 GAL)	DWH1	2042	120	15	GAL	$1,730	1977	15	25	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH2	2051	110	66	GAL	$2,188	2004	15		2019
WH25	WATER HEATER - RESIDENTIAL, ELECTRIC (>100 GAL)	DWH3	9168	107	120	GAL	$3,349	2015	15		2030
PD02	DRAIN PIPING SYSTEM - CLASSROOM				80,877	SF	$1,389,492	1977	60		2037
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SUMP1	9170	122A	1	EA	$568	2016	20		2036
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SUMP2	9174	126	1	EA	$710	2016	20		2036
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	UAC1	2008	NW EXTERIOR	10	HP	$19,349	2008	25		2033
CH02	CHILLER - WATER-COOLED CENTRIFUGAL OR SCREW (150-350 TONS)	CH-1	2327	NW EXTERIOR	230	TON	$335,934	2006	30		2036
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DDXS1	6259, 6260, 6261	ROOF	6	TON	$19,380	2016	20		2036
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	JET OVHD FILTRATION	9175	108, OVHD	1	HP	$888	2016	35		2051
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCH-1	9176	126	1	HP	$8,882	2000	35		2035
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B1	2005	MECH RM, NEAR RM 170	8	HP	$53,427	1977	35	5	DR
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B2	2004	MECH RM, NEAR RM 170	8	HP	$53,427	1977	35	5	DR
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B3	2082	114, OVHD, STG A	8	HP	$66,924	1977	35	5	DR
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B4	2085	114, OVHD, STG A	8	HP	$66,924	1977	35	5	DR
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-2A1	6295	PTHS	30	HP	$195,202	2016	35		2051
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-2A2	6270	PTHS	30	HP	$195,202	2016	35		2051

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH17	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	PACE AHU	1583	ROOF	5	HP	$128,478	1977	25	15	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-304	6288	ROOF	1	EA	$3,773	2016	25		2041
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-1	1579	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-2	1572	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-3	1582	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-4	1570	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-5	1576	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-6	1575	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-7	1573	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-8	1574	ROOF	1	EA	$6,899	1977	25	15	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-9	1571	ROOF	1	EA	$6,899	1977	25	15	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU-2A1 RF		PTHS	15	HP	$19,813	2016	35		2051
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU-2A2 RF		PTHS	15	HP	$19,813	2016	35		2051
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4 CERAMICS		126	1	HP	$1,321	1977	35	5	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-3 CERAMICS	2090	126	1	HP	$1,321	2003	35		2038

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF	2099	E1-02	1	HP	$1,321	1977	35	5	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-303	6262	ROOF	1	HP	$5,466	2016	40		2056
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-302	6286	ROOF	1	HP	$5,466	2016	40		2056
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-301	6287	ROOF	2	HP	$8,073	2016	40		2056
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-1 CERAMICS	1578	ROOF	2	HP	$8,073	2000	40		2040
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-2 CERAMICS	1577	ROOF	2	HP	$8,073	2000	40		2040
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-2	1580	ROOF	2	HP	$8,073	2000	40		2040
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-1	1581	ROOF	2	HP	$8,073	2000	40		2040
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	HVU-2B1 RF		MECH RM, NEAR RM 170	3	HP	$13,926	1977	40		DR
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	HVU-2B2 RF		MECH RM, NEAR RM 170	3	HP	$13,926	1977	40		DR
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	KILN HOOD		126	18	LF	$18,926	2017	30		2047
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	KILN HOOD		NW EXTERIOR KILN BLDG	3	LF	$3,154	2017	30		2047
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	ORIGINAL			72,877	SF	$2,592,541	1977	45		2022
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	UPDATED		PTHS	8,000	SF	$284,594	2016	45		2061
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-301	6302	PTHS	1	HP	$1,693	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-302	6303	PTHS	10	HP	$16,926	2016	30		2046

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-303	6285	PTHS	1	HP	$1,693	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-304	6266	PTHS	10	HP	$16,926	2016	30		2046
PH03	PUMP - ELECTRIC (15 - 20 HP)	CHWP-1	2329	NW EXTERIOR	20	HP	$30,885	2006	35		2041
PH03	PUMP - ELECTRIC (15 - 20 HP)	CHWP-2	2330	NW EXTERIOR	20	HP	$30,885	2012	35		2047
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM	UPDATED DDC		THROUGHOUT	80,877	SF	$273,993	2016	20		2036
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	UPDATED DDC		THROUGHOUT	80,877	SF	$76,244	2016	10		2026
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	UPDATED DDC		THROUGHOUT	80,877	SF	$40,513	2016	10		2026
FS01	FIRE SPRINKLER SYSTEM - WET			THROUGHOUT	77,377	SF	$1,046,806	1977	80		2057
FS01	FIRE SPRINKLER SYSTEM - WET			PTHS	3,500	SF	$47,350	2016	80		2096
FA01	FIRE ALARM SYSTEM - DEVICES		9881698	B120	80,877	SF	$347,612	2007	18		2025
FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		9881698	B120	1	EA	$24,131	2007	18		2025
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			72,877	SF	$1,809,761	1977	50		2027
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	UPDATED			8,000	SF	$198,665	2016	50		2066
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP-1	2094, 2095, 2326	E1-02	1,600	AMP	$129,616	2017	40		2057
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-2A1 RF	6291	PTHS	10	HP	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-2A1 RF	6292	PTHS	10	HP	$5,554	2016	15		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-302	6293	PTHS	10	HP	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-2A2 RF	6281	PTHS	10	HP	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-2A2 RF	6280	PTHS	10	HP	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-304	6279	PTHS	10	HP	$5,554	2016	15		2031
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-2A1 SF	6289	PTHS	15	HP	$6,433	2016	16		2032
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-2A1 SF	6290	PTHS	15	HP	$6,433	2016	16		2032
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-2A2 SF	6283	PTHS	15	HP	$6,433	2016	16		2032
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-2A2 SF	6282	PTHS	15	HP	$6,433	2016	16		2032
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			PERIMETER	29	EA	$22,377	2017	20		2037
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T8 LTG		THROUGHOUT	16,177	SF	$221,628	2005	20		2025
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	LED/UPDATED T8			64,700	SF	$726,559	2016	20		2036
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS 4OS3	9119	E1-02	100	AMP	$5,527	2012	25		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS 4LS3	9120	E1-02	80	AMP	$4,422	2012	25		2037
SI09	FENCING, PERIMETER SECURITY			KILN YARD	60	LF	$48,396	2016	30		2046

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$19,229,581				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED		1,290	SF	$19,657	DR
B2010	GLASS, STOREFRONT		1,040	SF	$146,833	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		9,360	SF	$1,693,762	DR
B2030	DOOR OPERATOR, OVERHEAD PANEL DOOR, RESIDENTIAL, PADS	EXT STORAGE	1	EA	$893	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ORIG, W/ PANIC HDWR	25	LEAF	$75,556	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ORIG, W/ COM HDWR	5	LEAF	$15,111	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ COM HDWR	11	LEAF	$22,072	DR
B2030	DOOR, EXTERIOR, OVERHEAD PANEL OR SECTIONAL, PAINTED, LOCK		72	SF	$4,528	DR
B3010	ROOF - GREEN COVERING OVER MEMBRANE		107	SF	$15,292	DR
B3010	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH		28,998	SF	$525,544	DR
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM		23,413	SF	$500,059	DR
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM		537	SF	$15,598	DR
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	METAL	1,220	LF	$23,289	DR
B3020	ROOF SKYLIGHT - PLASTIC DOME		8	SF	$1,448	DR
B3020	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	BUR	2,100	SF	$600,964	DR
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		270	LF	$151,438	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		280	SF	$1,927	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD		2,920	SF	$102,979	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	1997	6	EA	$4,635	DR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (<=15 GAL)	DWH1	15	GAL	$1,730	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B1	8	HP	$53,427	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B2	8	HP	$53,427	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B3	8	HP	$66,924	DR
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	HVU-2B4	8	HP	$66,924	DR
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	PACE AHU	5	HP	$128,478	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-1	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-2	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-3	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-4	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-5	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-6	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-7	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-8	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CEF-9	1	EA	$6,899	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4 CERAMICS	1	HP	$1,321	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF	1	HP	$1,321	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	HVU-2B1 RF	3	HP	$13,926	DR
D3040	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	HVU-2B2 RF	3	HP	$13,926	DR
				TOTAL DEFERRED RENEWAL COST	**$4,385,083**	

No Projected Component Replacement Cost for Asset No. 3030 for 2018

2019

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH2	66	GAL	$2,254	2019
2019		**PROJECTED COMPONENT REPLACEMENT COST**			**$2,254**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	1	EA	$8,917	2020
2020		**PROJECTED COMPONENT REPLACEMENT COST**			**$8,917**	

No Projected Component Replacement Cost for Asset No. 3030 for 2021

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	HVAC DISTRIBUTION NETWORKS - CLASSROOM	ORIGINAL	72,877	SF	$2,917,927	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$2,917,927	

No Projected Component Replacement Cost for Asset No. 3030 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2012	9,280	SF	$132,009	2024
C3010	WALL FINISH - APPLIED, STANDARD	2012	40,120	SF	$133,704	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$265,714	

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	T8 LTG	16,177	SF	$272,574	2025
D4030	FIRE ALARM SYSTEM - DEVICES		80,877	SF	$427,519	2025
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		1	EA	$29,679	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$729,772	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

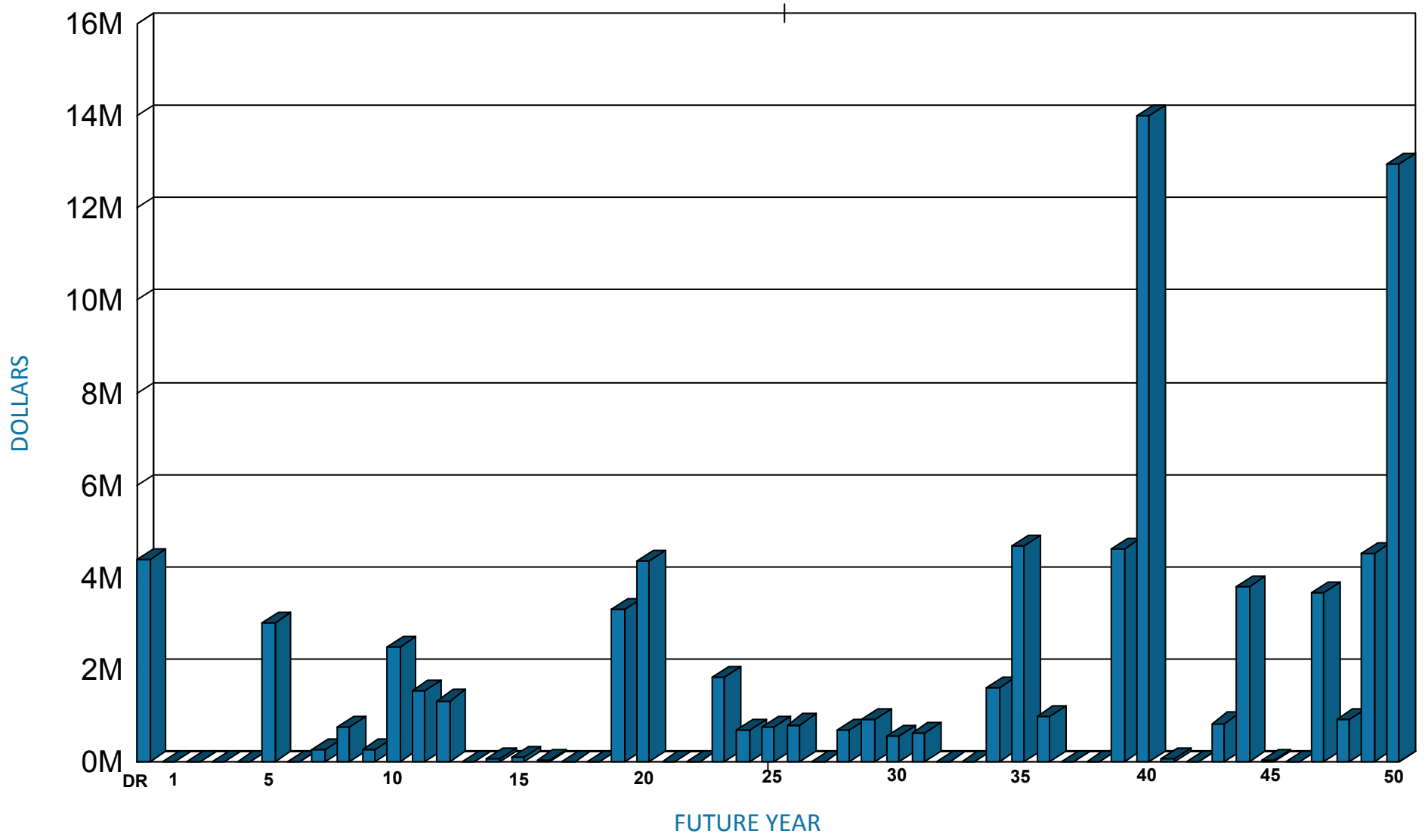
2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		27,500	SF	$121,844	2026
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	UPDATED DDC	80,877	SF	$51,320	2026
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	UPDATED DDC	80,877	SF	$96,584	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$269,748**	

2027

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL	72,877	SF	$2,361,328	2027
C3020	FLOORING - HARDWOOD STRIP, STANDARD	MASONITE, PLYWD	1,240	SF	$21,967	2027
C3020	FLOORING - HARDWOOD STRIP, STANDARD		1,240	SF	$18,090	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$2,401,386**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



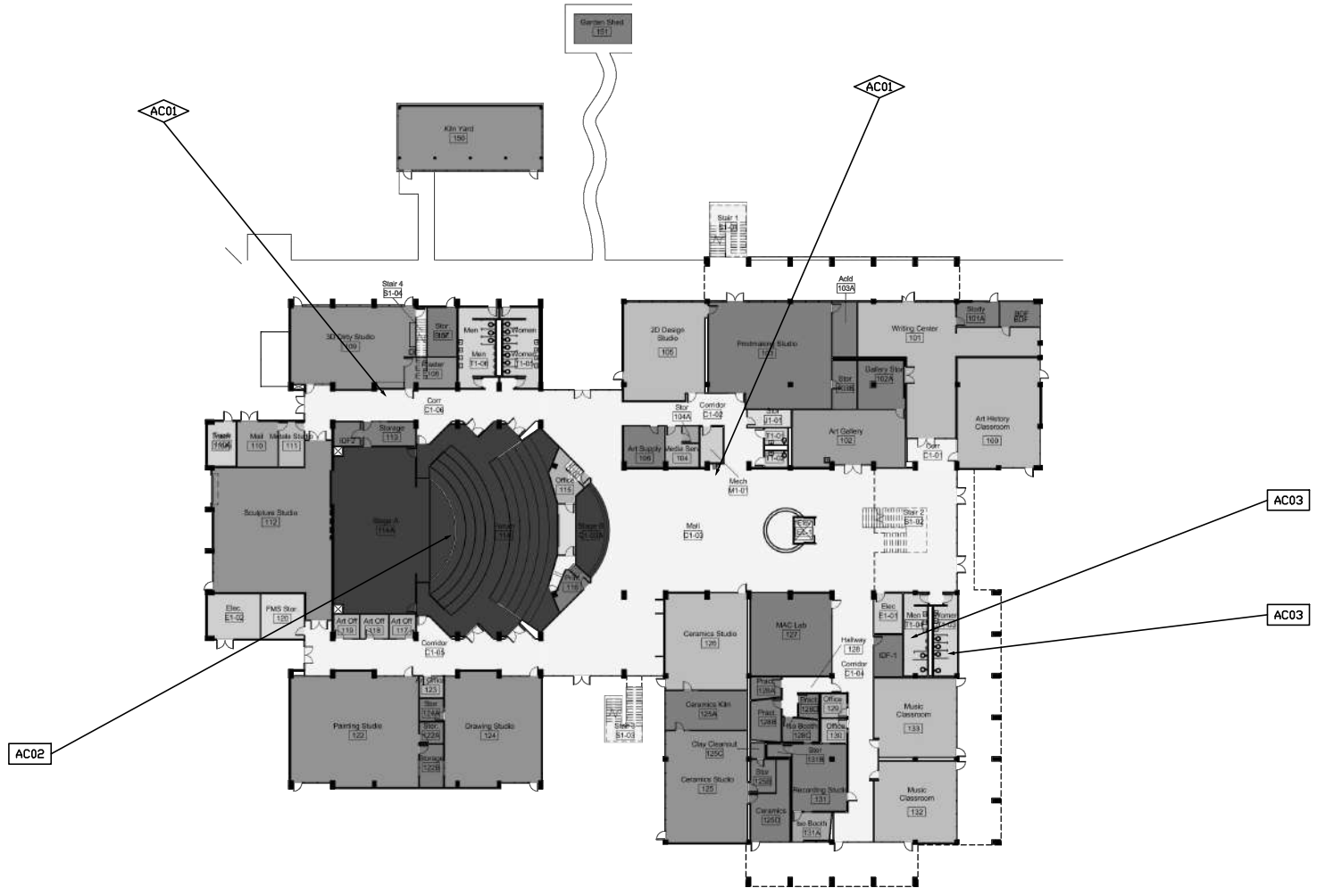
Average Annual Renewal Cost per SF $8.32

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



HE01

BUILDING
3

BLDG NO. 3030

PES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

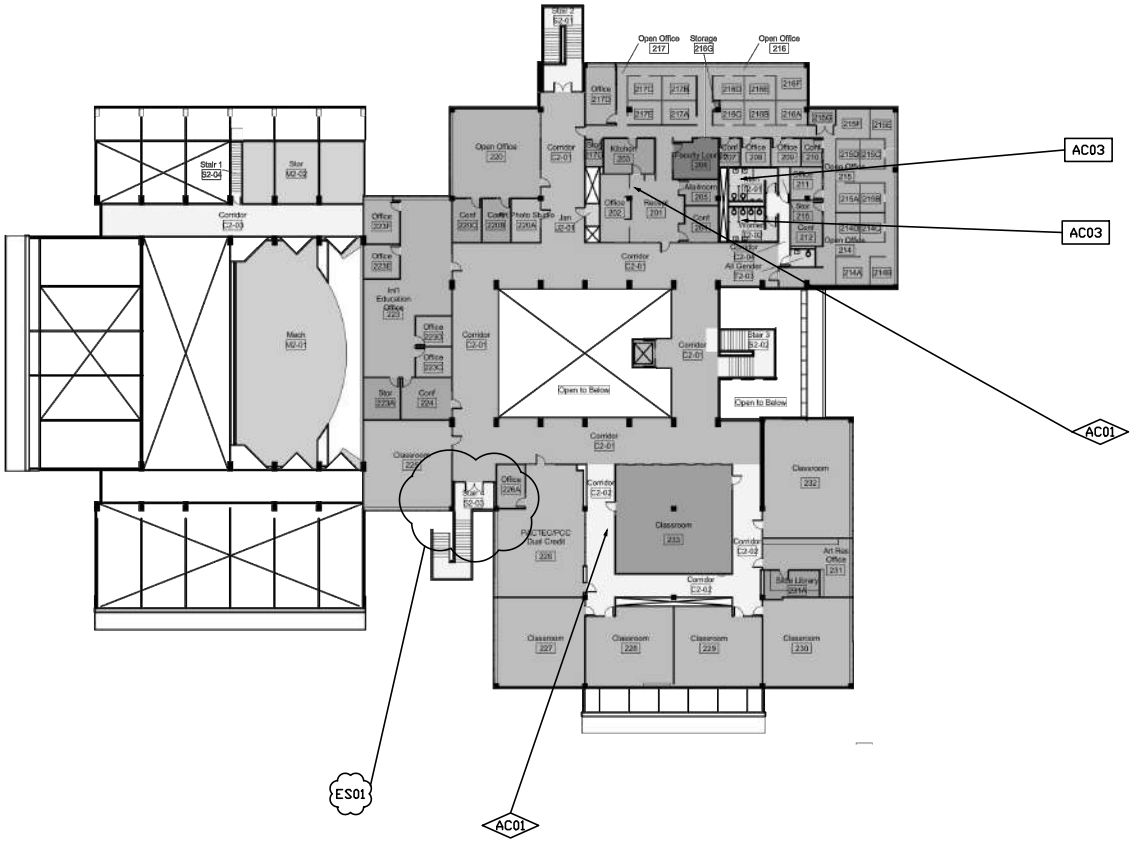
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE



AC04 HE01

BUILDING
3

BLDG NO. 3030

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

3030001a 8/28/2018

BUR

Roof

3030001e 8/28/2018

One of two variable volume, four-pipe, main AHUs

Penthouse

3030002a 8/28/2018

Metal siding

Penthouse

3030002e 8/28/2018

One of four heating hot water pumps

Penthouse

3030003a 8/28/2018

Sealed concrete and painted finishes

Penthouse

3030003e 8/28/2018

Typical VFDs for AHUs and heating hot water media pumps

Penthouse

3030004a 8/28/2018
Aluminum and glass skylights
Roof

3030004e 8/28/2018
Honeywell direct digital control system
Penthouse

3030005a 8/28/2018
Standing seam metal roof
Roof

3030005e 8/28/2018
One of multiple original, worn centrifugal exhaust fans
Roof

3030006a 8/28/2018
Vinyl tile floors and applied finishes
Storage M2-02

3030006e 8/28/2018
Updated centrifugal exhaust fan
Roof

3030007a 8/28/2018
Aged casework and kitchen sink
Storage M2-02

3030007e 8/28/2018
Utility-type exhaust for shops and general exhaust
Roof

3030008a 8/28/2018
Plywood floors and unfinished surfaces
Corridor C2-03

3030008e 8/28/2018
VAV reheat terminal units updated as part of 2016 penthouse renovations
Penthouse

3030009a 8/28/2018
Vinyl tile floor, painted walls, and lay-in acoustical ceiling tile
Room 109

3030009e 8/28/2018
Updated frangible glass bulb sprinkler head
Penthouse

3030010a 8/28/2018

Missing railing

Forum 114

3030010e 8/28/2018

Aged and worn outdoor AHU

Roof

3030011a 8/28/2018

Fixed seating

Forum 114

3030011e 8/28/2018

Ductless DX air-cooled condenser

Roof

3030012a 8/28/2018

Ceramic tile finishes and plumbing fixtures

Single-user restroom

3030012e 8/28/2018

Typical original HVAC ducting

Throughout

3030013a 8/28/2018
Aged ceramic tile finishes and upgraded wall-mounted lavatories
Restroom T1-04

3030013e 8/28/2018
Two of four, original, constant volume, two-pipe AHUs
Overhead stage A, room 114

3030014a 8/28/2018
Aged ceramic tile finishes and urinals
Restroom T1-04

3030014e 8/28/2018
T8 lay-in, open cell, parabolic fixtures
Throughout

3030015a 8/28/2018
Aged ceramic tile finishes and upgraded wall-mounted water closets
Restroom T1-04

3030015e 8/28/2018
Emergency eyewash station
Room 109

3030016a 8/28/2018

Nonaccessible service counter

Room 201

3030016e 8/28/2018

Ceiling-mounted air filtration system

Room 109

3030017a 8/28/2018

Noncompliant railing

Mall C1-03

3030017e 8/28/2018

Original secondary electrical panelboards

Second floor, corridor

3030018a 8/28/2018

Noncompliant railing

Stair 3

3030018e 8/28/2018

Decorative wall-mounted CFL fixture

Second floor, corridor

3030019a 8/28/2018

Carpeted floor, painted walls, and lay-in acoustical tile ceiling

Room 220B

3030019e 8/28/2018

T12 light fixture

Second floor, custodial room

3030020a 8/28/2018

Carpeted floor, painted walls, and lay-in acoustical tile ceiling

Room 214

3030020e 8/28/2018

Updated secondary electrical panelboards

Room 101

3030021a 8/28/2018

Sealed concrete and painted finishes

Corridor C2-01

3030021e 8/28/2018

One of three ductless DX evaporator units

Room BDF

3030022a 8/28/2018
Carpeted floor, painted walls, and lay-in acoustical tile ceiling
Room 223

3030022e 8/28/2018
Main elevator controller and hydraulic reservoir
Room M1-01

3030023a 8/28/2018
Nonaccessible drinking fountain
Corridor C2-02

3030023e 8/28/2018
Fire alarm control panel
Room 120

3030024a 8/28/2018
Sliding glass and aluminum doors
Corridor C2-01

3030024e 8/28/2018
Original, residential, electric domestic hot water heater
Room 120

3030025a 8/28/2018
Carpeted floor, painted walls, and lay-in acoustical tile ceiling
Room 225

3030025e 8/28/2018
Recently updated sump pump system
Room 122A

3030026a 8/28/2018
Drinking fountain that is not properly protected
Mall C1-03

3030026e 8/28/2018
Overhead two-pipe fan coil unit
Room 126

3030027a 8/28/2018
Painted finishes and lay-in acoustical tile ceiling
Corridor C1-02

3030027e 8/28/2018
One of two inline centrifugal exhaust fans
Room 126

3030028a 8/28/2018

Stainless steel kitchen sinks

Room 103

3030028e 8/28/2018

Main disconnect switchgear

Room E1-02

3030029a 8/28/2018

Aged casework

Room 126

3030029e 8/28/2018

Air-cooled, screw-type water chiller unit

Northwest exterior

3030030a 8/28/2018

Concrete floor and aged casework

Room 125

3030030e 8/28/2018

Wall-mounted LED light fixtures

Northwest exterior

3030031a 8/28/2018

Primary elevation

East elevation

3030031e 8/28/2018

Main chilled water pumps

Northwest exterior

3030032a 8/28/2018

Painted finishes

North elevation

3030032e 8/28/2018

Updated, residential, electric domestic hot water heater

Room 110

3030033a 8/28/2018

Wood surface with applied finish

East elevation

3030033e 8/28/2018

Domestic water backflow preventer valve

Room 107

3030034a 8/28/2018
Exterior painted surfaces and glazing
South elevation

3030034e 8/28/2018
Half-ton crane for kiln yard building
Northwest exterior

3030035a 8/28/2018
Damaged wood surfaces
South elevation

3030036a 8/28/2018
Metal siding and garage door
External Storage

3030037a 8/28/2018
Exterior painted surfaces and glazing
North elevation

3030038a 8/28/2018
Security fence
Kiln yard

3030039a 8/28/2018

Painted surfaces and green roof

Straw bale house

3030040a 8/28/2018

Exterior painted surfaces and glazing

Northeast corner

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3030
Asset Name	Building 3
Year Built or Last Energy Renovation	1977

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

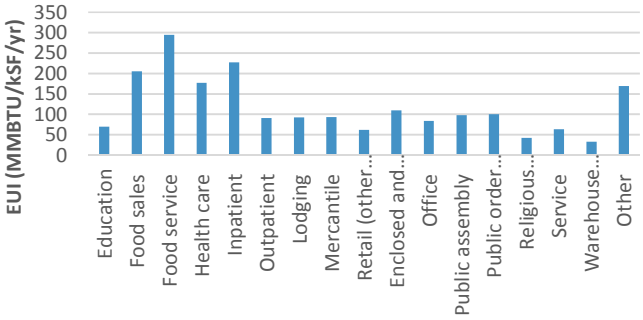
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

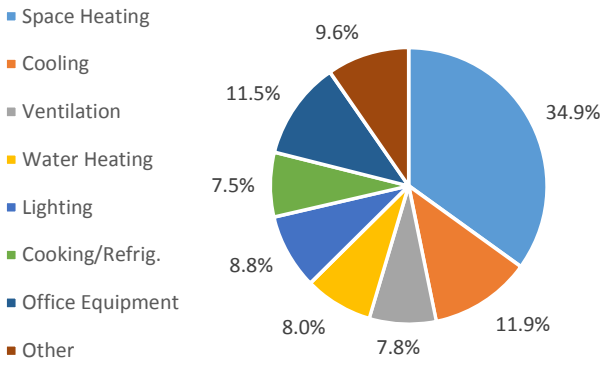


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
Electrical - VFDs	INSTALL VARIABLE FREQUENCY DRIVES. Install VFDs on motors greater than 5 hp to reduce energy consumption by varying motor speed based on system demand.	O&M; LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 5

Asset 3050

Inspected August 29, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

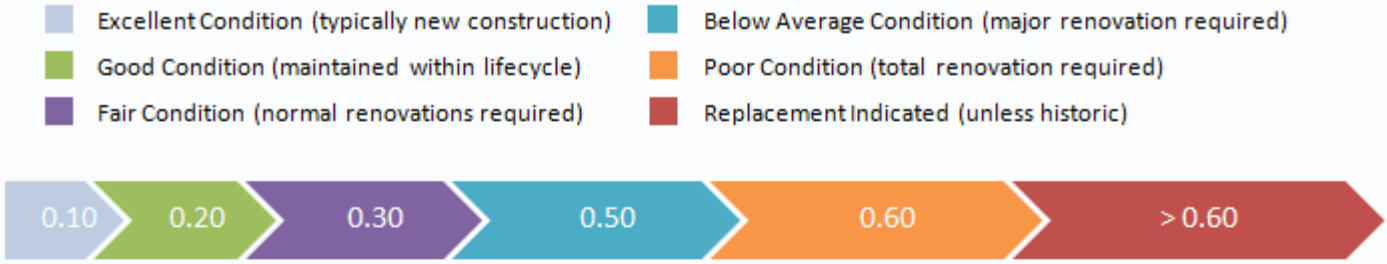
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

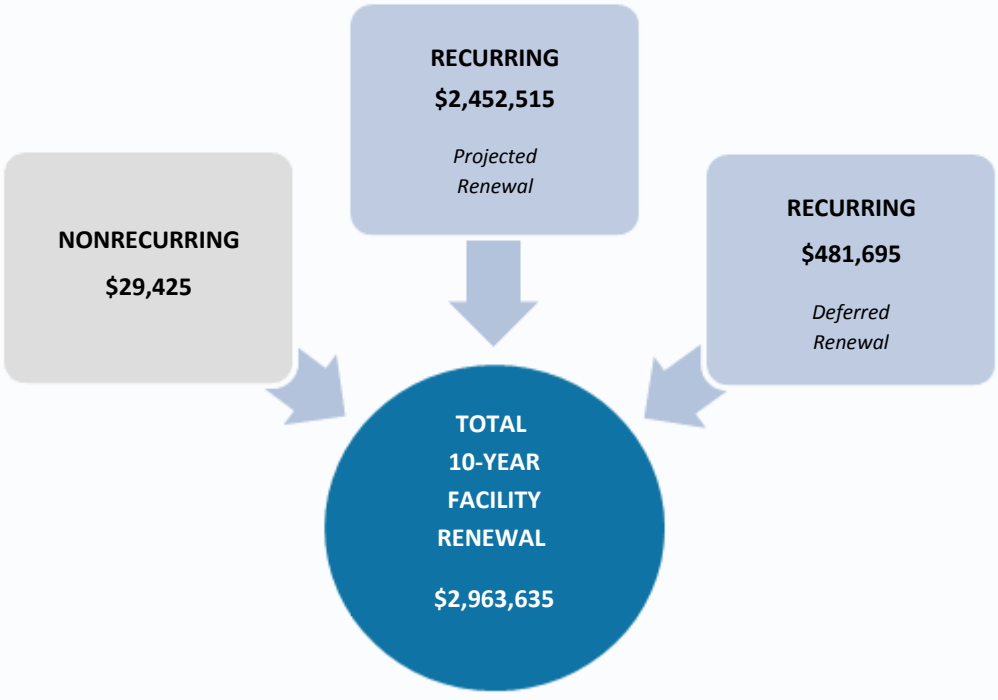
ASSET CODE	3050		
ASSET NAME	BUILDING 5	**CURRENT REPLACEMENT VALUE**	$29,671,000
ASSET USE	Student Union	**FACILITY CONDITION NEEDS INDEX**	0.10
YEAR BUILT	1982	**FACILITY CONDITION INDEX**	0.02
GSF	87,743	**10-YEAR $/SF**	33.78
INSPECTION DATE	08/29/2018		

FCNI Scale

The FCNI for this asset is **0.10**



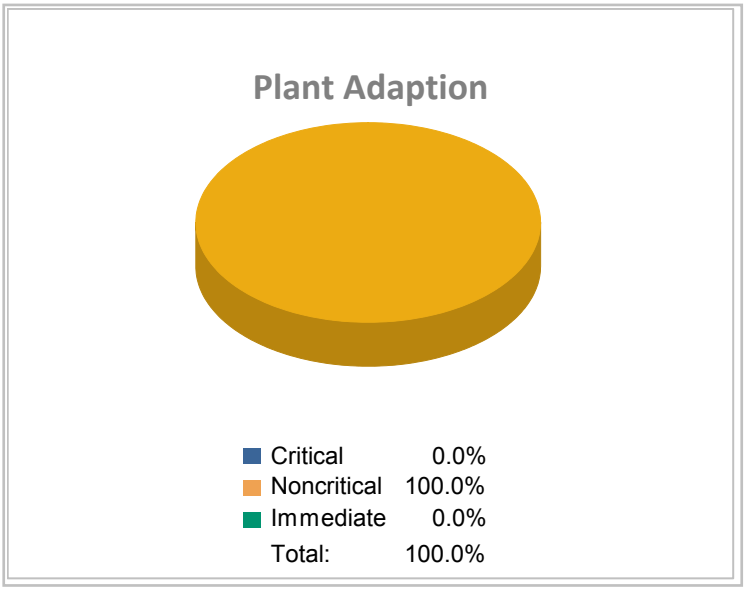
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

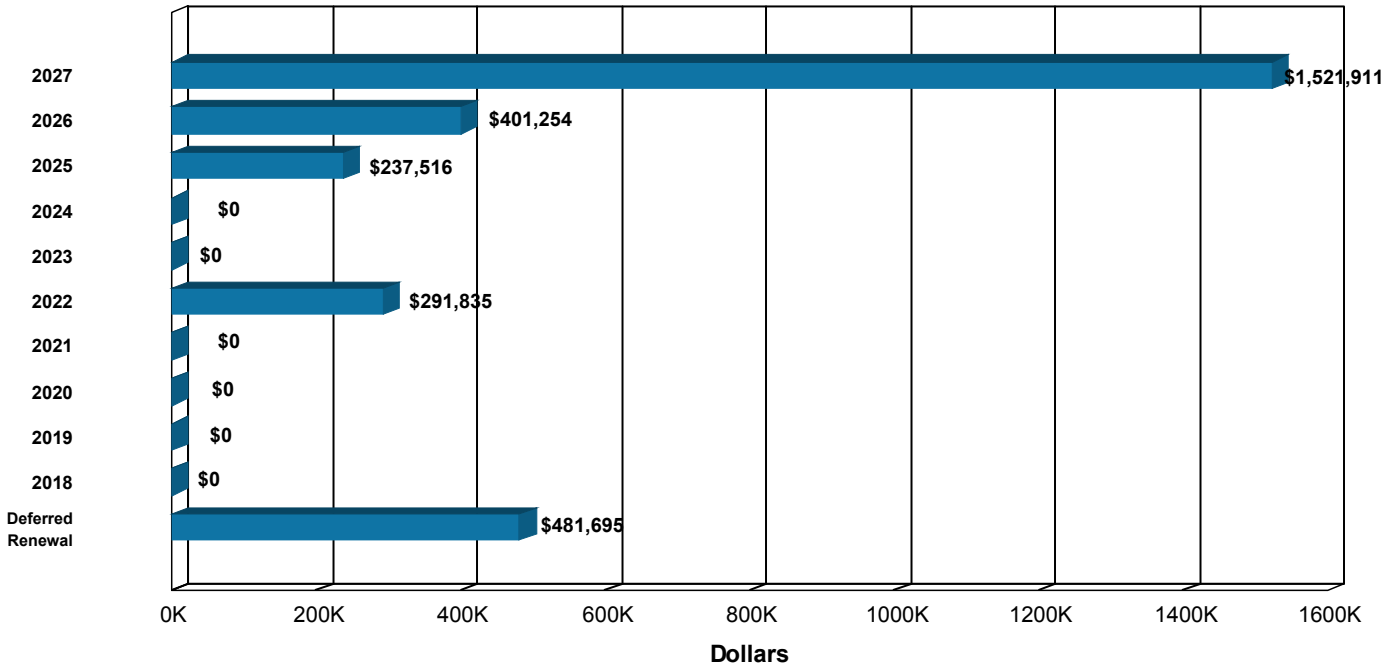
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$29,425**



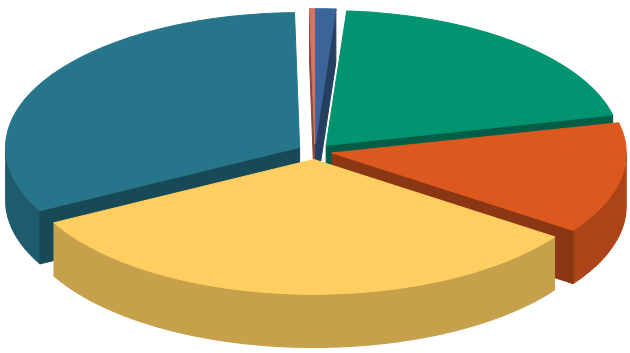
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$29,425	1%
Electrical	$0	0%
Exterior	$602,091	20%
Fire/Life Safety	$401,254	14%
Health	$0	0%
HVAC	$962,578	32%
Interiors	$962,479	32%
Plumbing	$5,809	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$2,963,635**	

ASSET SUMMARY

Building 5 is a two-story student union located on the Portland Community College Rock Creek campus. Constructed in 1982, the original portion of the building is a single-level gymnasium equipped with a large weight room, a men's and woman's locker room, and a mechanical loft. In 2015, a split-level addition was added along the western and southern elevations. The second floor of this addition contains a combination of offices and classrooms. The first floor of the addition has a mixture of student services, a dining room, kitchen, and bookstore. The building has concrete, masonry, and metal structural elements. The roofing system consists of a flat central roof over the gymnasium, with a pitched metal roof on the north and east sides. The remaining roof is a TPO system. Collectively, the two wings of this building total 87,743 gross square feet.

Information for this report was gathered during a site visit that concluded on August 29, 2018.

Site

The grounds around this facility are well planted and appear to be adequately maintained. No planting upgrades appear to be warranted at this time. The concrete walkways that surround most of the building are also in good overall condition. No repairs or upgrades are recommended.

Exterior Structure

The 2015 addition has a TPO roof. The roof and associated skylights are in excellent condition, with no reported issues. These applications are expected to serve through the scope of this report with normal routine maintenance. The bituminous roof over the gymnasium and the pitched metal roofing were reported to be original. The bituminous roof has served well beyond its expected service life, and the metal application will require upgrade in the next four to five years. It is recommended that both roofs be scheduled for near-term upgrade.

The painted concrete, brick, and metal exterior surfaces are generally in good condition, partly due to the renovations and additions completed within the last two years. With normal routine maintenance, these surfaces will continue to serve the building through the timeframe of this report.

Exterior glass doors, hollow metal doors, and overhead coiling doors associated with the 2015 addition are in excellent condition, only requiring hardware upgrades during the latter stages of this report. The older section of the building has several hollow metal mechanical and pedestrian doors. These doors will exhaust their service lives during the scope of this report and should be scheduled for replacement.

Exterior window systems and storefronts are thermal-pane, anodized, aluminum-framed units that should be adequate for the next 10 years. The Kalwall translucent clerestory panels in the main gymnasium have a good overall appearance and should also be adequate for the next 10 years.

Interior Finishes/Systems

The interior finishes in this high use facility are generally in good condition. The multi-use court flooring in the main gymnasium and weight room was refinished in 2015 and appears to be adequate at this time. The newer carpet, sheet vinyl, ceramic tile, and wood flooring are in excellent condition, with only the carpet applications requiring replacement towards the end of the report scope. The older ceramic tile in the locker rooms and sealed concrete applications are nearing the end of their useful service lives and should also be scheduled for upgrade during the mid-term of this report.

The majority of the interior walls and partitions have painted finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for buildings with this occupancy and use. Minor repairs should be completed before work begins. Ceramic wall tile in the restrooms is in satisfactory condition, with no projected upgrades in the next 10 years. Ceilings are a combination of suspended tile and painted finishes. These finishes are generally in good condition. Isolated concerns throughout the building should be addressed through routine maintenance.

Casework and related countertops are generally in good condition and showing signs of normal use. The telescoping bleachers in the gymnasium were updated in 2015. Interior doors are typical wood and metal frame applications that are fire rated where appropriate. The interior door systems, bleachers, and casework applications are typically suitable for 10 or more additional years of service given the performance of normal maintenance.

Accessibility

The building has accessible entries, and the restrooms and interior spaces appear to meet current ADA requirements. The only noted concerns for accessibility were the lack of dual-level drinking fountains in the men's and women's locker rooms and the lack of cane protection or proper alcoves for drinking fountains in the 2015 addition. It is recommended that dual-level drinking fountains be installed in each locker room and that the remaining drinking fountains be recessed or provided with proper cane barriers.

Health

No health-related issues were observed or reported by facility personnel at the time of the onsite review for this building. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The Silent Knight addressable fire alarm control panel (FACP) is located in room 106. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on normal life expectancies and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also protected by a wet- and dry-pipe automated fire suppression system with both frangible glass bulb and fusible link sprinkler heads. The relatively long-lived system was partially updated in 2015. It appears to be in good condition and is anticipated to provide reliable service beyond the scope of this report, given the completion of normal testing, inspection, and maintenance as required per NFPA 25.

HVAC

Primary sources of heating, cooling, and ventilation are provided by air handling units (AHUs), heat recovery units (HRUs), city-multi DX systems with associated fan coil units, smaller ductless DX split systems, cabinet unit heaters, ductwork, and a Honeywell direct digital control (DDC) system. The terminal assembly components of the DDC should provide approximately 20 years of service. However, software, field panel, and major instrumentation DDC components have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns, and they are recommended for replacement within the next 10 years. Updating these specific elements of the DDC system should enhance facility maintenance and energy efficiencies and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set-points where not already employed.

Two boilers in the building generate heating hot water. The hydronic heating medium is distributed to the AHU heating coils by a single heating hot water pump. Three single zone, constant volume, two-pipe AHUs provide the bulk of the HVAC needs. The units and their associated distribution components are early 1980s vintage and due for replacement. Building cooling is provided by a city-multi DX system consisting of air-cooled condenser modules and overhead concealed fan coil units. Supplemental HVAC requirements are addressed by DX ductless split systems and two large HRUs. Makeup air units, rooftop centrifugal fans, and utility exhaust fans address facility exhaust and ventilation requirements. All of this equipment was updated in 2015 and should provide suitable service over the reporting tenure.

Electrical

Power from a utility-owned transformer is fed through the Square D main disconnect on the northern exterior to two different switchboards. The switchboard in M2-1 feeds portions of the original building, and for budgeting purposes, it is now considered to be part of the secondary system. The larger, modern 277/480 volt switchboard has a rated capacity of 1,600 amps. Power is then fed to the secondary electrical distribution network using multiple step-down, dry-type transformers to provide 120/208 volt power where required. No modernization is anticipated over the next 10 years.

Lighting throughout the facility consists of T8 and LED fixtures, the majority of which were updated in 2015 as part of the large renovation effort. Wall-mounted and recessed LED fixtures illuminate the building perimeter and entrances. Bollard LED lighting is provided for adjacent walking paths. Where T8 lighting currently exists, campus-wide lighting retrofit efforts will likely convert these fixtures to LED, although this is not necessary for lifecycle purposes.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve the rooftop HRUs and some of the exhaust fans. No replacements are anticipated over the next 10 years.

Emergency electrical service for this building is fed through two automatic transfer switches. The switches provide power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed throughout this facility by rigid copper piping. Where observed, sanitary waste, vent, and stormwater piping is of cast-iron construction. Both the supply and drain piping networks are in working condition, with no issues noted by facility personnel. The piping should continue to provide adequate service over the reporting timeline.

Commercial, gas-fired domestic hot water heaters provide service for athletic locker rooms and building restrooms. Two backflow preventer valves (BFPs) service the fire suppression and domestic water systems. The valves protect the public water system from cross contamination and generally have a 20-year lifecycle if tested and maintained properly. A utility air compressor, located in room 107, is original and recommended for replacement.

The plumbing fixtures in this building consist of dual-level drinking fountains, tankless water closets, urinals, showers, utility sinks, kitchen sinks, and lavatories. Most were updated in 2015 and are in excellent condition. The urinals in the men’s locker room are reportedly original and should be considered for near-term replacement.

Vertical Transportation

A machine room-less ThyssenKrupp passenger elevator serves the facility. The unit has a 2,500 pound capacity and transits two floors. The unit was modernized in 2015. While detailed elevator testing and inspection are not included in this assessment effort, the systems observed were in working condition and operating properly on the day of the inspection. No further modernization is anticipated over the reporting period.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
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Date of Inspection

August 29, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	29,425	0	0	0	0	0	0	0	0	0	0	0	$29,425
EXTERIOR	0	0	0	298,977	0	0	0	0	263,974	0	0	0	0	39,140	$602,091
INTERIOR	0	0	0	0	0	0	0	0	27,861	0	0	116,016	0	818,602	$962,479
PLUMBING	0	0	0	5,809	0	0	0	0	0	0	0	0	0	0	$5,809
HVAC	0	0	0	176,909	0	0	0	0	0	0	0	121,500	0	664,169	$962,578
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	401,254	0	$401,254
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$0	$29,425	$481,695	$0	$0	$0	$0	$291,835	$0	$0	$237,516	$401,254	$1,521,911	$2,963,635
TOTAL NONRECURRING PROJECT NEEDS			$29,425	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,934,210	

CURRENT REPLACEMENT VALUE	$29,671,000
FACILITY CONDITION NEEDS INDEX	0.10
FACILITY CONDITION INDEX	0.02

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
87,743	$2,963,635	$33.78

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$29,425	$0	$29,425
EXTERIOR	$0	$602,091	$602,091
INTERIOR	$0	$962,479	$962,479
PLUMBING	$0	$5,809	$5,809
HVAC	$0	$962,578	$962,578
FIRE/LIFE SAFETY	$0	$401,254	$401,254
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$29,425**	**$2,934,210**	**$2,963,635**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3050AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	29,425
				TOTAL	**$29,425**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3050	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUR			B3010	Deferred Renewal	298,977
3050	FX10	PLUMBING FIXTURE - URINAL	ORIGINAL			D2010	Deferred Renewal	2,157
3050	PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UAC1	5470	107A	D2090	Deferred Renewal	3,652
3050	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU3	5463	M2-1	D3040	Deferred Renewal	41,957
3050	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU4	5464	M2-1	D3040	Deferred Renewal	41,957
3050	AH07	AIR HANDLING UNIT - INDOOR (9-12 HP)	AHU2	5461	M2-1	D3040	Deferred Renewal	76,848
3050	FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	AHU2 RF	5460	M2-1	D3040	Deferred Renewal	8,073
3050	FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	AHU3 RF	5462	M2-1	D3040	Deferred Renewal	8,073
3050	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ PANIC HDWR			B2030	2022	4,013
3050	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ COM HDWR			B2030	2022	20,066
3050	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			B3010	2022	239,895
3050	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			LOCKER RMS	C3020	2022	27,861
3050	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2025	116,016
3050	BA29	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - GYMNASIUM				D3060	2025	80,133
3050	BA52	HVAC CONTROLS - MAJOR INSTRUMENTATION - GYMNASIUM				D3060	2025	41,368
3050	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2026	377,122

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3050	FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		10823142	106	D4030	2026	24,131
3050	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2027	9,464
3050	DR36	DOOR PANIC HARDWARE, EXTERIOR	EXT HM DRS			B2030	2027	7,122
3050	DR36	DOOR PANIC HARDWARE, EXTERIOR	EXT GM DRS			B2030	2027	22,553
3050	IW01	WALL FINISH - APPLIED, STANDARD	2015			C3010	2027	536,376
3050	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2027	282,227
3050	HV06	HVAC DISTRIBUTION NETWORKS - GYMNASIUM	ORIG BLDG			D3040	2027	664,169
							TOTAL	**$2,934,210**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	3050AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$29,425
		TOTAL FOR PLANT ADAPTION		**$29,425**
		GRAND TOTAL:		**$29,425**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	3050AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$29,425
				TOTAL FOR ACCESSIBILITY	**$29,425**
				GRAND TOTAL:	**$29,425**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	3050AC01	**Category Code:** AC3F	
Priority Sequence:	1		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/29/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all people. The configuration of drinking fountains in the locker rooms is a barrier to accessibility. These single-level drinking fountains should be replaced with dual-level units that are properly recessed or protected by cane barriers. Additionally, the dual-level drinking fountains currently in the building should be recessed or protected by cane barriers to ensure a compliant environment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	2	$1,549	$3,098	$476	$952	$4,051
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	4	$932	$3,729	$3,321	$13,286	$17,015
			Base Material/Labor Costs	**$6,828**		**$14,238**	
			Indexed Material/Labor Costs	**$6,787**		**$14,352**	**$21,139**
					Construction Mark Up at 20.0%		**$4,228**
					Original Construction Cost		**$25,366**
Date of Original Estimate: 8/29/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$25,366**
					Professional Fees at 16.0%		**$4,059**
					TOTAL PROJECT COST		**$29,425**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SF03	BLEACHER, TELESCOPING, ECON, UP TO 15 TIER, MANUAL			GYM	200	EA	$45,256	2015	25		2040
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				8,160	SF	$172,183	2015	25		2040
WN05	GLASS, STOREFRONT				1,280	SF	$161,355	2015	40		2055
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				3,830	SF	$618,810	2015	40		2055
DR07	DOOR AND FRAME, EXTERIOR, SWINGING, SOLID GLASS	W/ COM HDWR			19	LEAF	$104,895	2015	40		2055
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ PANIC HDWR			2	LEAF	$4,013	1982	40		2022
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	UPDATED W/ PANIC HDWR			4	LEAF	$8,026	2015	40		2055
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ COM HDWR			10	LEAF	$20,066	1982	40		2022
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK			DOCK	42	SF	$4,376	2015	30		2045
DR20	DOOR, EXTERIOR, OVERHEAD PANEL OR SECTIONAL, PAINTED, LOCK			113	120	SF	$7,547	2015	20		2035
DR28	DOOR OPERATOR, POWER-ASSIST	INT DRS W/ COM HDWR			10	EA	$67,703	2015	20		2035
DR28	DOOR OPERATOR, POWER-ASSIST	EXT GM DRS W/ COM HDWR			4	EA	$27,081	2015	20		2035
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS			DOCK	1	EA	$2,095	2015	30		2045
DR31	DOOR OPERATOR, OVERHEAD PANEL DOOR, RESIDENTIAL, PADS			113	1	EA	$893	2015	20		2035
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				10	EA	$9,464	2015	12		2027
DR36	DOOR PANIC HARDWARE, EXTERIOR	EXT HM DRS			6	EA	$7,122	2015	12		2027

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR36	DOOR PANIC HARDWARE, EXTERIOR	EXT GM DRS			19	EA	$22,553	2015	12		2027
RR03	ROOF - 1-PLY, UNBALLASTED	TPO			34,500	SF	$530,779	2015	20		2035
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUR			11,000	SF	$298,977	1982	30	5	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			11,700	SF	$239,895	1982	40		2022
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	TPO			620	SF	$177,428	2015	35		2050
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	ORIGINAL		OFFICE	7	LEAF	$15,480	1982	60		2042
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	UPDATED		OFFICE	33	LEAF	$72,978	2015	60		2075
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ COM HDWR			10	LEAF	$36,685	1982	60		2042
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	UPDATED, W/ COM HDWR			45	LEAF	$165,084	2015	60		2075
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	ORIG, W/ PANIC HDWR			4	LEAF	$14,674	1982	60		2042
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	UPDATED, W/ PANIC HDWR			16	LEAF	$58,697	2015	60		2075
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR			OFFICES	40	EA	$30,116	2015	35		2050
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				55	EA	$41,409	2015	35		2050
DR26	DOOR PANIC HARDWARE, INTERIOR				20	EA	$23,739	2015	30		2045
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				115	LF	$64,501	2015	30		2045
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	PAINTED CONCRETE			4,000	SF	$22,507	2015	12	3	2030

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IW01	WALL FINISH - APPLIED, STANDARD	2015			192,180	SF	$536,376	2015	12		2027
IW01	WALL FINISH - APPLIED, STANDARD	2018			48,050	SF	$134,108	2018	12		2030
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			LOCKER RMS	3,160	SF	$127,985	1982	60		2042
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				9,480	SF	$383,955	2015	60		2075
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				23,690	SF	$282,227	2015	12		2027
IF04	FLOORING - VINYL SHEET, STANDARD				5,530	SF	$62,340	2015	15		2030
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			LOCKER RMS	790	SF	$27,861	1982	40		2022
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				3,160	SF	$111,443	2015	40		2055
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				33,170	SF	$116,016	2015	10		2025
IF17	FLOORING - ATHLETIC, RUBBER, TILE OR ROLL			GYM, EX RM	11,850	SF	$359,706	2015	20		2035
IF19	FLOORING - ATHLETIC TRACK, WOOD			211, 111	1,110	SF	$15,988	2015	50		2065
IF26	INTERIOR STAIR TREAD AND LANDING FINISH				2	FLR	$7,871	2015	15		2030
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				59,230	SF	$659,241	2015	45		2060
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2015			15,790	SF	$44,070	2015	24		2039
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2018			3,950	SF	$11,024	2018	24		2042
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	4384		1	EA	$309,580	2015	25		2040

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				3	EA	$8,082	2015	25		2040
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				28	EA	$37,832	2015	35		2050
FX04	PLUMBING FIXTURE - SINK, KITCHEN				4	EA	$3,090	2015	20		2035
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			1	EA	$1,664	1982	50		2032
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	UPDATED			4	EA	$6,657	2015	50		2065
FX07	PLUMBING FIXTURE - SHOWER, GANG PEDESTAL, STAINLESS STEEL				8	EA	$91,690	2015	35		2050
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				4	EA	$4,551	2015	35		2050
FX10	PLUMBING FIXTURE - URINAL	ORIGINAL			2	EA	$2,157	1982	35		DR
FX10	PLUMBING FIXTURE - URINAL	UPDATED			4	EA	$4,315	2015	35		2050
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				23	EA	$38,984	2015	35		2050
BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP		144	1	EA	$8,406	2015	20		2035
BF05	BACKFLOW PREVENTER (4-6 INCHES)	DW BFP		102	1	EA	$12,272	2015	20		2035
PS06	SUPPLY PIPING SYSTEM - GYMNASIUM			ORIG BLDG	24,525	SF	$123,040	1982	50		2032
PS21	SUPPLY PIPING SYSTEM - STUDENT UNION			ADDITION	63,218	SF	$713,607	2015	50		2065
TK13	EXPANSION TANK, GALV (50-450 GAL)	ST-1	5499	129	750	GAL	$36,306	2015	40		2055
TK16	EXPANSION TANK, DIAPHRAGM (45-69 GAL)	DET-1	5498	129	53	GAL	$6,201	2015	20		2035

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	GWH-1A	5495	129	450	MBH	$26,178	2016	25		2041
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	GWH-1B	5496	129	450	MBH	$26,178	2016	25		2041
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	GWH-1C	9150	129	450	MBH	$26,178	2016	25		2041
PD06	DRAIN PIPING SYSTEM - GYMNASIUM			ORIG BLDG	24,525	SF	$184,515	1982	60		2042
PD21	DRAIN PIPING SYSTEM - STUDENT UNION			ADDITION	63,218	SF	$1,069,635	2015	60		2075
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UAC1	5470	107A	2	HP	$3,652	1982	25	10	DR
BL25	BOILER - GAS (410-800 MBH)	B1	5468	107A	676	MBH	$35,270	2002	28		2030
BL26	BOILER - GAS (800-1500 MBH)	B-101	5467	107A	927	MBH	$51,177	2015	28		2043
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	ACCU-308 ELEV	5482	ROOF	2	TON	$5,031	2015	25		2040
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-301 NW WING	9087, 9177-9182	ROOF	40	TON	$129,202	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-302 NW WING	9086, 9183, 9201	ROOF	40	TON	$129,202	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-303 NW WING	9090	ROOF	40	TON	$129,202	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-304 SE WING	9085, 9186, 9187, 9203, 9204	ROOF	40	TON	$129,202	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-305 SE WING	9089, 9188-9192	ROOF	40	TON	$129,202	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-306 SE WING	9088, 9185, 9193-9200	ROOF	40	TON	$129,202	2015	20		2035
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-307 BDF/IDF RMS	5481	ROOF	4	TON	$12,920	2015	20		2035

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	CUHS		VARIOUS	3	HP	$3,997	2015	35		2050
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU3	5463	M2-1	5	HP	$41,957	1982	35		DR
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU4	5464	M2-1	5	HP	$41,957	1982	35		DR
AH07	AIR HANDLING UNIT - INDOOR (9-12 HP)	AHU2	5461	M2-1	10	HP	$76,848	1982	35		DR
AH18	AIR HANDLING UNIT - OUTDOOR PACKAGE (5-8 HP)	HRU-301	5489	ROOF	8	HP	$108,664	2015	25		2040
AH19	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	HRU-302	5486	ROOF	10	HP	$168,149	2015	25		2040
AH25	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (140-208 MBH INPUT)	MAU-302	5484	ROOF	200	MBH	$16,322	2015	25		2040
AH29	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (>525 MBH INPUT)	MAU-301	5483	ROOF	830	MBH	$36,627	2015	25		2040
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-301 NUT LAB	5476	ROOF	1	EA	$8,436	2015	25		2040
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-306	5475	ROOF	1	EA	$8,436	2015	25		2040
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-302 DISHWASHER	5474	ROOF	1	EA	$8,436	2015	25		2040
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRU-301 RF		ROOF	8	HP	$10,567	2015	35		2050
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRU-302 RF		ROOF	8	HP	$10,567	2015	35		2050
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	AHU2 RF	5460	M2-1	2	HP	$8,073	1982	40	-5	DR
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	AHU3 RF	5462	M2-1	2	HP	$8,073	1982	40	-5	DR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-304 KIT	5480	ROOF	5	HP	$11,255	2015	40		2055

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-305	5478	ROOF	5	HP	$11,255	2015	40		2055
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-303 KIT	6385	ROOF	5	HP	$11,255	2015	40		2055
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-1	5465	M2-1	10	HP	$22,509	2015	40		2055
HV06	HVAC DISTRIBUTION NETWORKS - GYMNASIUM	ORIG BLDG			24,525	SF	$664,169	1982	45		2027
HV21	HVAC DISTRIBUTION NETWORKS - STUDENT UNION	ADDITION			63,218	SF	$1,689,005	2015	45		2060
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-101	5472	107A	2	HP	$3,385	2015	30		2045
TK27	EXPANSION TANK, GALV (50-450 GAL)	ET1	5469	107A	500	GAL	$30,255	2002	40		2042
TK30	EXPANSION TANK, DIAPHRAGM (45-69 GAL)	ET-101	5471	107A	53	GAL	$7,751	2015	20		2035
BA06	HVAC CONTROLS - TERMINAL ASSEMBLIES - GYMNASIUM				87,743	SF	$286,880	2015	20		2035
BA29	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - GYMNASIUM				87,743	SF	$80,133	2015	10		2025
BA52	HVAC CONTROLS - MAJOR INSTRUMENTATION - GYMNASIUM				87,743	SF	$41,368	2015	10		2025
FS01	FIRE SPRINKLER SYSTEM - WET			ORIG BLDG	13,725	SF	$185,681	1982	80		2062
FS01	FIRE SPRINKLER SYSTEM - WET			ADDITION	63,218	SF	$855,254	2015	80		2095
FS02	FIRE SPRINKLER SYSTEM - DRY	DRY		LOADING DOCK	600	SF	$9,109	2015	25		2040
FA01	FIRE ALARM SYSTEM - DEVICES				87,743	SF	$377,122	2008	18		2026
FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		10823142	106	1	EA	$24,131	2008	18		2026

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC1	9152	M2-1	3	EA	$228,652	1982	25	21	2028
SE06	ELECTRICAL DISTRIBUTION NETWORK - GYMNASIUM			ORIG BLDG	24,525	SF	$302,324	1982	50		2032
SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION			ADDITION	63,218	SF	$1,479,423	2015	50		2065
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	LS42-1	6376	232	100	AMP	$8,338	2015	40		2055
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	SB24-1	6374		100	AMP	$8,338	2015	40		2055
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP-03	6373	232	1,600	AMP	$129,616	2015	40		2055
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	MDP-02	9151	EXTERIOR	2,000	AMP	$168,411	2015	40		2055
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-304	5479	ROOF	5	HP	$3,633	2015	15		2030
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-301	5477	ROOF	5	HP	$3,633	2015	15		2030
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-303	9084	ROOF	5	HP	$3,633	2015	15		2030
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HRU-301 RECV WHEEL	5488	ROOF	8	HP	$3,999	2015	15		2030
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HRU-302 RECV WHEEL	5487	ROOF	10	HP	$5,554	2015	15		2030
LE01	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING			PERIMETER, ENTRIES	30	EA	$6,128	2015	15		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)			PERIMETER, ENTRIES	7	EA	$3,560	2015	20		2035
LE04	COM EXTERIOR BOLLARD LIGHTING			PERIMETER, ENTRIES	11	EA	$14,476	2015	20		2035
LI06	LIGHTING SYSTEM, INTERIOR - GYMNASIUM			ORIG BLDG	24,525	SF	$210,044	2009	20		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION			ADDITION	63,218	SF	$746,905	2015	20		2035
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				70,000	SF	$160,759	2015	20		2035
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS LS42-1	9124	232	150	AMP	$5,956	2015	25		2040
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS SB42-1	9125	232	400	AMP	$15,881	2015	25		2040
						Grand Total:	$17,957,866				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUR	11,000	SF	$298,977	DR
D2010	PLUMBING FIXTURE - URINAL	ORIGINAL	2	EA	$2,157	DR
D2090	AIR COMPRESSOR - UTILITY (< =5 HP)	UAC1	2	HP	$3,652	DR
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU3	5	HP	$41,957	DR
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU4	5	HP	$41,957	DR
D3040	AIR HANDLING UNIT - INDOOR (9-12 HP)	AHU2	10	HP	$76,848	DR
D3040	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	AHU2 RF	2	HP	$8,073	DR
D3040	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	AHU3 RF	2	HP	$8,073	DR
				TOTAL DEFERRED RENEWAL COST	$481,695	

No Projected Component Replacement Cost for Asset No. 3050 for 2018

No Projected Component Replacement Cost for Asset No. 3050 for 2019

No Projected Component Replacement Cost for Asset No. 3050 for 2020

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 3050 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ PANIC HDWR	2	LEAF	$4,517	2022
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	ORIG, W/ COM HDWR	10	LEAF	$22,584	2022
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD		790	SF	$31,357	2022
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL	11,700	SF	$270,004	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$328,462**	

No Projected Component Replacement Cost for Asset No. 3050 for 2023

No Projected Component Replacement Cost for Asset No. 3050 for 2024

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		33,170	SF	$142,685	2025
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - GYMNASIUM		87,743	SF	$50,877	2025
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - GYMNASIUM		87,743	SF	$98,553	2025

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

	2025	PROJECTED COMPONENT REPLACEMENT COST	$292,115	

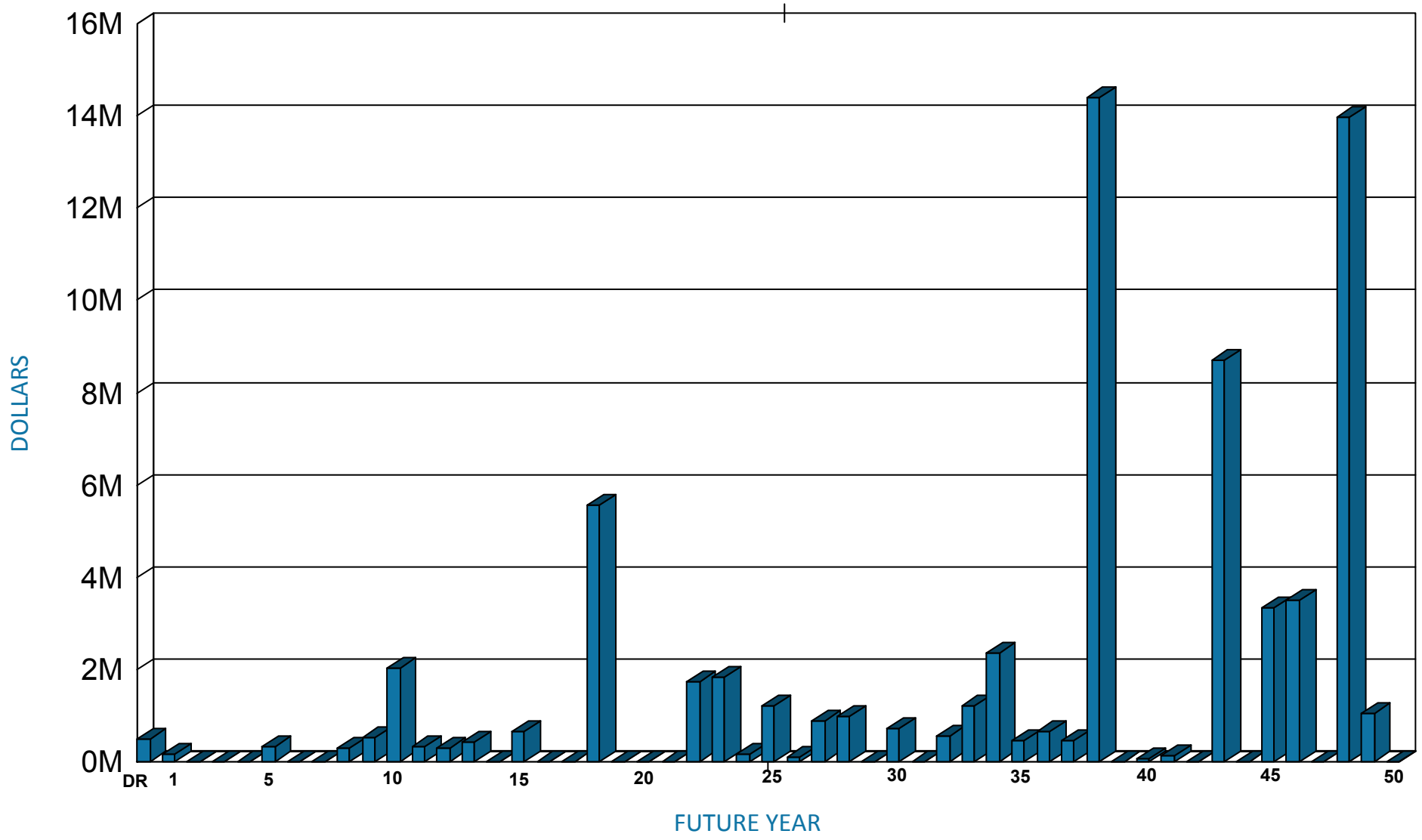
2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES		87,743	SF	$477,727	2026
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS		1	EA	$30,569	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$508,296	

2027

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	HVAC DISTRIBUTION NETWORKS - GYMNASIUM	ORIG BLDG	24,525	SF	$866,590	2027
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		23,690	SF	$368,242	2027
C3010	WALL FINISH - APPLIED, STANDARD	2015	192,180	SF	$699,848	2027
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		10	EA	$12,349	2027
B2030	DOOR PANIC HARDWARE, EXTERIOR	EXT HM DRS	6	EA	$9,293	2027
B2030	DOOR PANIC HARDWARE, EXTERIOR	EXT GM DRS	19	EA	$29,427	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$1,985,749	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



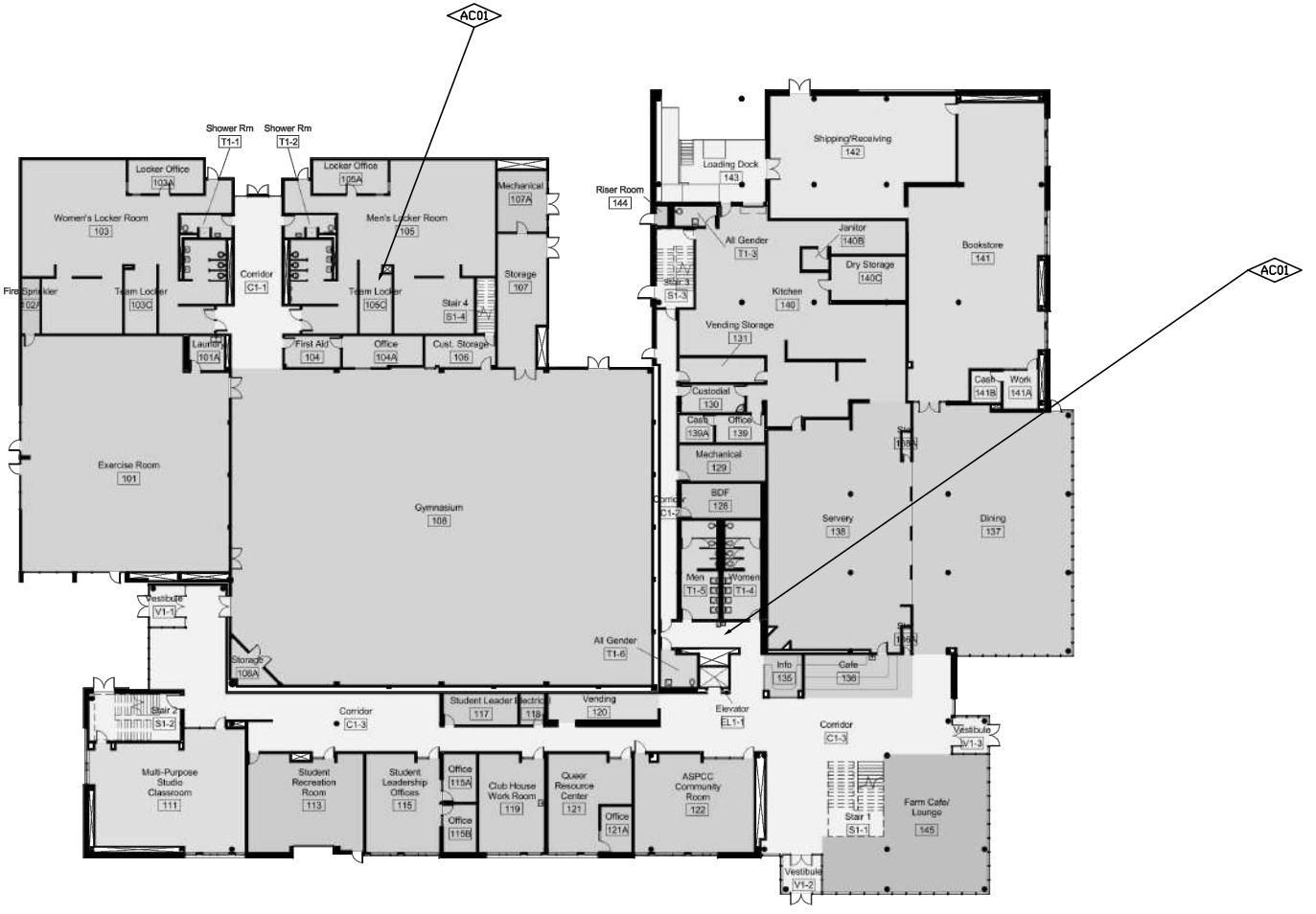
Average Annual Renewal Cost per SF $5.78

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



BUILDING
5

BLDG NO. 3050

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

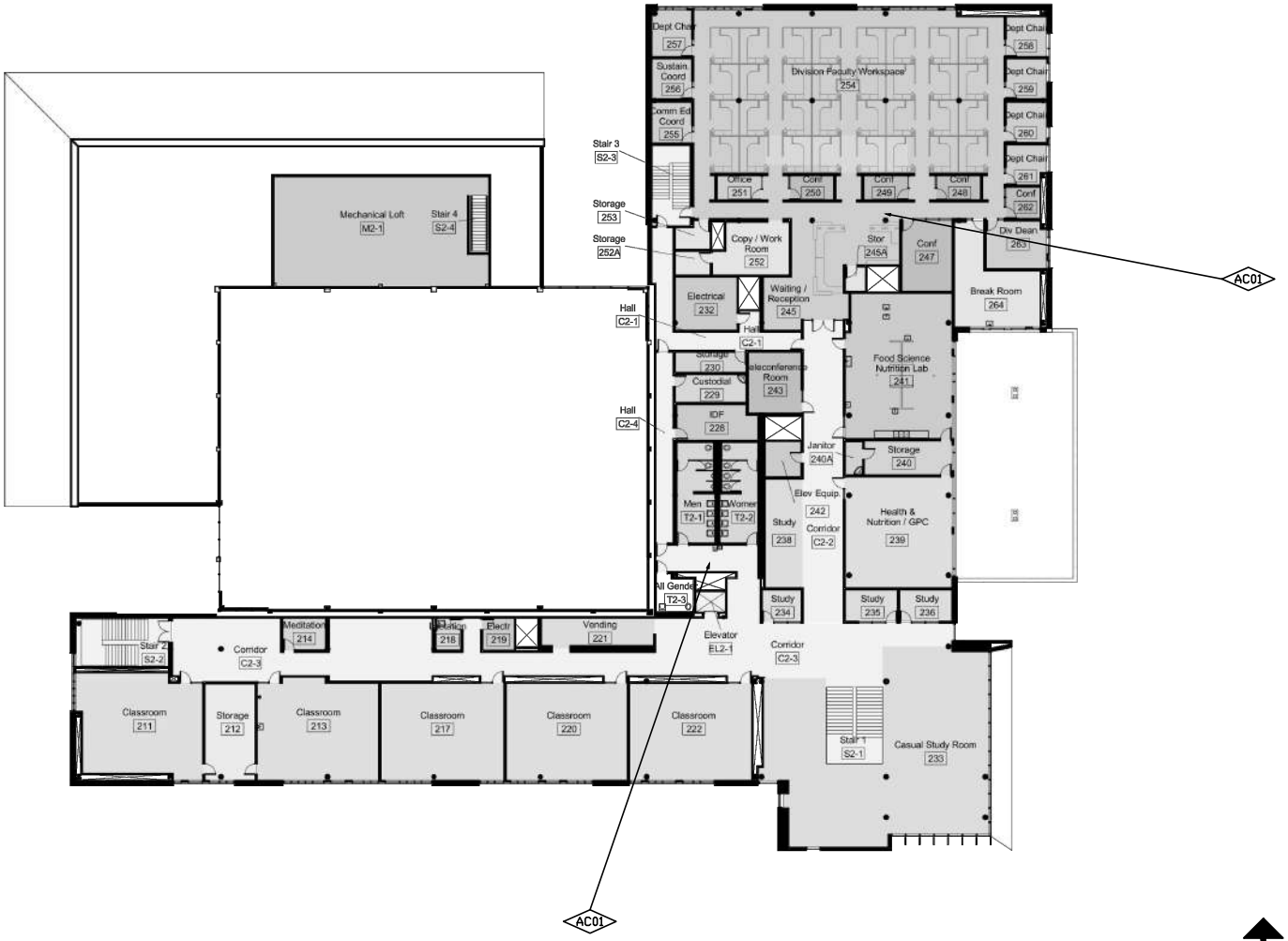
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE



BUILDING
5

BLDG NO. 3050

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

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PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

3050001a 8/29/2018

Standing seam metal roof

Northeast corner

3050001e 8/29/2018

One of two heat recovery units with enthalpy wheel

Roof

3050002a 8/29/2018

New TPO roof

Roof

3050002e 8/29/2018

Ductless DX air-cooled multi-city split system condenser modules

Roof

3050003a 8/29/2018

Aluminum and glass skylight

Roof

3050003e 8/29/2018

Ductless DX air-cooled split system condenser

Roof

3050004a 8/29/2018

Aged BUR

Gym roof

3050004e 8/29/2018

Centrifugal exhaust fan for nutrition lab

Roof

3050005a 8/29/2018

Compliant railings

Stair tower 3

3050005e 8/29/2018

Utility exhaust fan

Roof

3050006a 8/29/2018

Carpeted floor, painted walls, and lay-in tile ceiling

Room 257

3050006e 8/29/2018

One of two gas-fired, makeup air units

Roof

3050007a 8/29/2018
Carpeted floor, painted walls, and lay-in tile ceiling
Room 254

3050007e 8/29/2018
Main switchboard for building modernization spaces
Room 232

3050008a 8/29/2018
Vinyl sheet floors and casework
Room 264

3050008e 8/29/2018
Automatic transfer switches and disconnects
Room 232

3050009a 8/29/2018
Ballasted BUR roof
South elevation

3050009e 8/29/2018
Ductless DX evaporator unit for main electrical room cooling
Room 232

3050010a 8/29/2018
Carpeted floor, painted walls, and lay-in tile ceiling
Room 247

3050010e 8/29/2018
Decorative lighting fixtures in renovated spaces
Room 233

3050011a 8/29/2018
Commercial cooking equipment
Room 241

3050011e 8/29/2018
Elevator cab updated in 2015
Elevator #1

3050012a 8/29/2018
Ceramic tile finishes and wall-mounted lavatories
Restroom T2-1

3050012e 8/29/2018
Typical classroom suspended LED light fixtures
Room 217

3050013a 8/29/2018
Ceramic tile finishes and wall-mounted urinals
Restroom T2-1

3050013e 8/29/2018
Typical FCU for ductless DX multi-city split system
Room 212

3050014a 8/29/2018
Ceramic tile finishes and wall-mounted water closet
Restroom T2-1

3050014e 8/29/2018
Commercial, gas-fired domestic hot water heaters
Room 129

3050015a 8/29/2018
Accessible drinking fountain without cane barriers or alcove
Restroom corridor

3050015e 8/29/2018
Honeywell DDC field panel and respective components
Room 129

3050016a 8/29/2018
Sealed concrete floor and painted surfaces
Corridor C2-2

3050016e 8/29/2018
Wet-pipe and dry-pipe fire suppression piping
Room 144

3050017a 8/29/2018
Carpeted floor, painted walls, and lay-in metal tile ceiling
Room 233

3050017e 8/29/2018
Gas-fired heating hot water boiler
Room 107

3050018a 8/29/2018
Carpeted floor, painted walls, and lay-in tile ceiling
Room 239

3050018e 8/29/2018
Original secondary electrical panelboards
Room 107

3050019a 8/29/2018

Wood flooring

Room 111

3050019e 8/29/2018

Updated high bay LED lighting

Main gymnasium

3050020a 8/29/2018

Sealed concrete floor, painted surfaces, and lay-in metal tile ceiling

Dining 137

3050020e 8/29/2018

Fire alarm control panel

Room 106

3050021a 8/29/2018

Sealed concrete and applied finish surfaces

Bookstore 141

3050021e 8/29/2018

One of three, constant volume, two-pipe, original AHUs

Room M2-1

3050022a 8/29/2018
Exterior metal siding and hollow metal doors
Dock 143

3050022e 8/29/2018
Original three section motor control center
Room M2-1

3050023a 8/29/2018
Sealed concrete and applied finish surfaces
Kitchen 140

3050023e 8/29/2018
Recessed LED lighting
Building entrances

3050024a 8/29/2018
Athletic rubber flooring and painted surfaces
Gymnasium 108

3050024e 8/29/2018
Main switchboard and disconnect for facility
Northern exterior

3050025a 8/29/2018
Athletic rubber flooring and painted surfaces
Exercise room 101

3050025e 8/29/2018
T8 light fixtures for loading dock
Northern exterior

3050026a 8/29/2018
Nonaccessible drinking fountain
Locker room 105

3050027a 8/29/2018
Gang showers and ADA-compliant shower
Locker room 105

3050028a 8/29/2018
ADA-compliant shower
Shower room T1-2

3050029a 8/29/2018
Exterior painted concrete and entrance doors
East elevation

3050030a 8/29/2018
Exterior painted concrete and metal roof
North elevation

3050031a 8/29/2018
Exterior finishes
North elevation

3050032a 8/29/2018
Exterior brick, metal panels, and glazing
West elevation

3050033a 8/29/2018
Primary elevation
South elevation

3050034a 8/29/2018
Exterior brick, metal panels, and glazing
Southeast corner

3050035a 8/29/2018
Exterior brick, metal panels, and glazing
East elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3050
Asset Name	Building 5
Year Built or Last Energy Renovation	1982

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

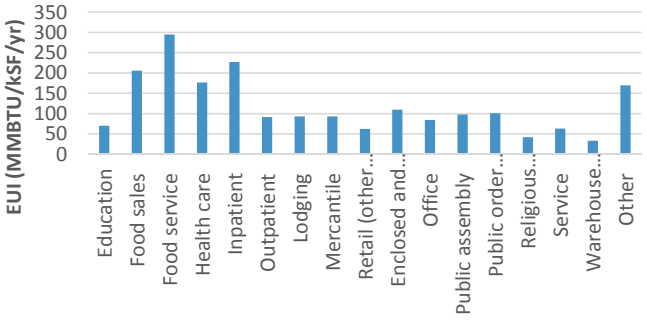
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Student Union
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**97.9**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 68.5
Energy Efficient (consumes 10% to 30% less energy)	68.5 <= EUI <= 88.1
Similar (consumes within 10% less or 10% more energy)	88.1 < EUI < 107.7
Energy Inefficient (consumes 10% to 30% more energy)	107.7 <= EUI <= 127.3
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 127.3

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

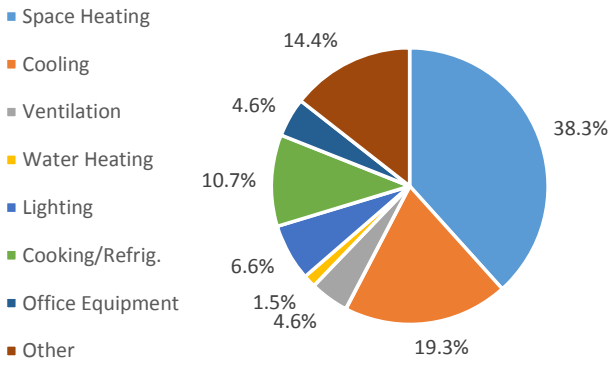


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: STUDENT UNION	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Student Union



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Roof Material	INSTALL A COOL ROOF PRODUCT. Cool roofs reflect sunlight/reduce solar heat gain. ENERGY STAR qualified cool roof products can lower roof surface temperature by up to 50°F, significantly decreasing the amount of heat transferred into a building.	CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
HVAC - Air Dist. Network, VAV	INSTALL VARIABLE AIR VOLUME (VAV) SYSTEM. In constant air volume (CAV) systems, more energy is required to heat, cool, and distribute air than in VAV systems. Consider a VAV system to reduce energy consumption, mainly fan energy consumption.	CAP
Electrical - Motor Efficiency	UPGRADE TO PREMIUM EFFICIENCY MOTORS. Premium efficiency motors operate more efficiently than standard or high efficiency motors and so reduce energy consumption and operating costs. A return on investment is usually realized within a few years.	O&M; LC/NC; CAP
Electrical - VFDs	INSTALL VARIABLE FREQUENCY DRIVES. Install VFDs on motors greater than 5 hp to reduce energy consumption by varying motor speed based on system demand.	O&M; LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 6
Asset 3060

Inspected August 29, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

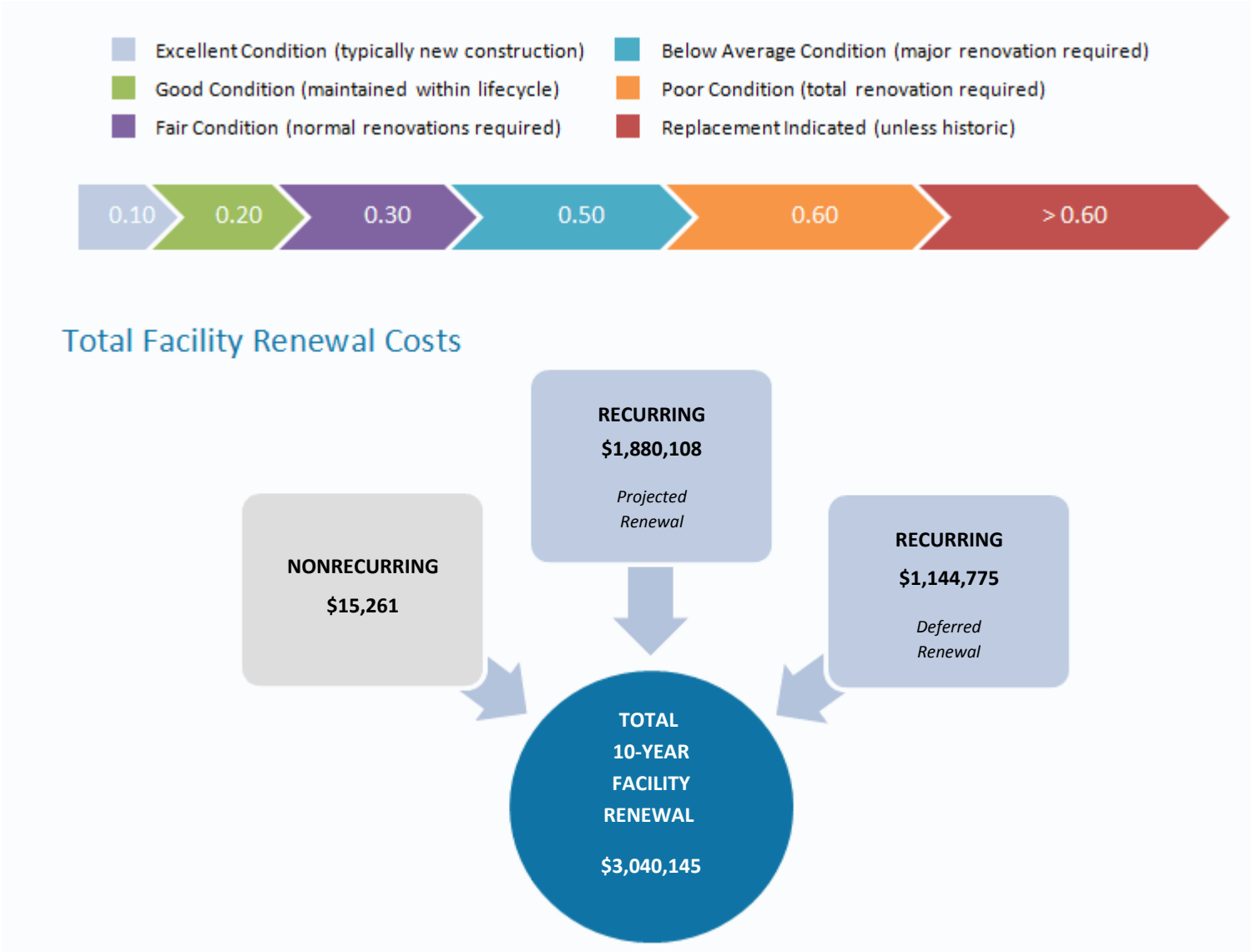
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

ASSET CODE	3060		
ASSET NAME	BUILDING 6	**CURRENT REPLACEMENT VALUE**	$14,247,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.21
YEAR BUILT	1980	**FACILITY CONDITION INDEX**	0.08
GSF	32,692	**10-YEAR $/SF**	92.99
INSPECTION DATE	08/29/2018		

FCNI Scale

The FCNI for this asset is **0.21**

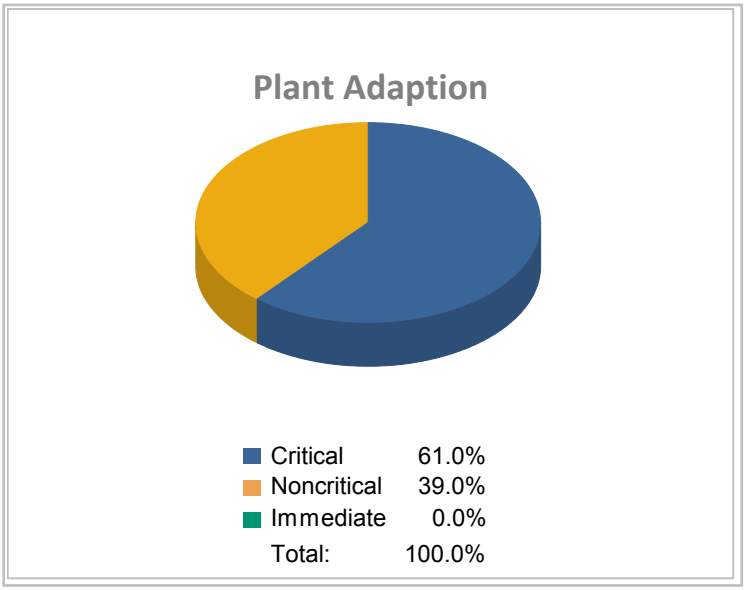


Total Facility Renewal Costs

Nonrecurring Costs

Project Cost by Priority

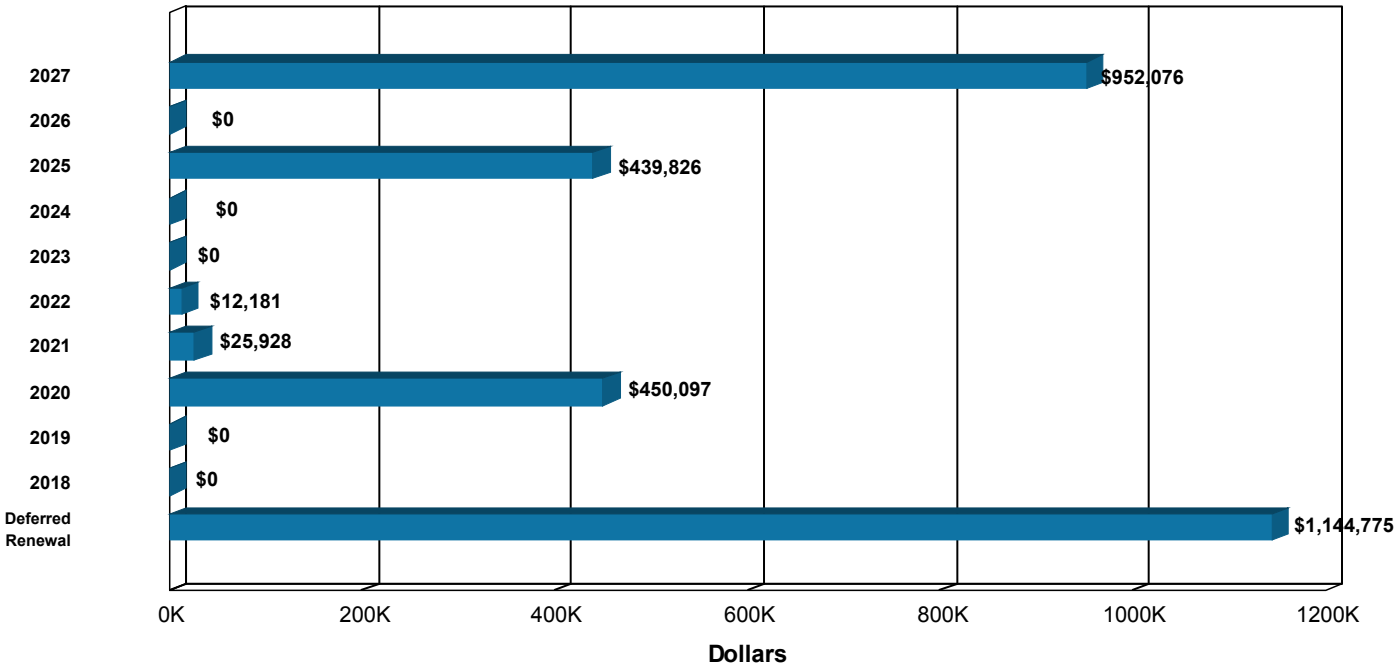
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$9,311**
3 - Noncritical	**$5,950**



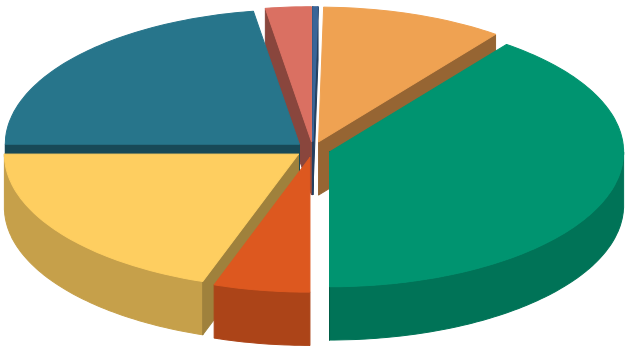
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$5,950	0%
Electrical	$307,398	10%
Exterior	$1,205,955	40%
Fire/Life Safety	$163,679	5%
Health	$0	0%
HVAC	$594,869	20%
Interiors	$682,746	22%
Plumbing	$79,547	3%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$3,040,145**	

ASSET SUMMARY

The Hangar, also known as Building 6, is an aviation training facility on the northeast corner of the Portland Community College, Rock Creek campus. Constructed in 1980, the Hangar was extensively remodeled and expanded in 1997. The current building footprint includes two high bay hangars, small shops, and a number of perimeter classrooms and support areas. Both the original building and the addition are pre-engineered metal buildings, each with a large hangar door assembly. The exterior doors around the hangar are a combination of older and newer glass and metal or hollow-metal assemblies. The exterior is finished in corrugated metal. The original building has a fairly flat corrugated metal roof, and the new section has a ribbed metal roofing system. Collectively, both sections of the building total approximately 32,692 gross square feet.

Information for this report was gathered during an on-site visit on August 29, 2018.

Site

The site around the building is well planted and in good overall condition. No additional landscaping upgrades appear to be warranted at this time. The concrete walkways that lead to the original northwest entry and the concrete walkway that runs along the covered arcade of the south elevation of the new addition are in good overall condition. No building site upgrades are warranted at this time. However, the aircraft tarmac to the northeast of the facility appears to be in poor condition and should be considered for further evaluation and replacement although it is not included as part of this report.

Exterior Structure

Although the roofing was not accessible on the day of inspection, the flatter metal roof over the original hangar structure is at the end of its normal lifecycle and should be replaced with a new ribbed metal roof similar to the roofing system on the addition. The guttering systems around the entire facility should be included as part of this project. The newer roof on the addition is a prefinished, ribbed metal system that is in good overall condition.

The pre-engineered metal frame work of both the older and newer sections of the building are visible in areas like the high bays, and these structural elements have a good overall appearance. The corrugated metal siding on both sections is in average condition. It is recommended that the metal siding on both sections be replaced during the ten-year scope of this report. The large sliding hangar door on the original high bay is reportedly in good overall condition, as are the newer bi-fold hangar door on the addition and the two overhead coiling doors. However, due to service life depletion it is recommended that these systems be replaced. The building entry doors vary in age and those on the original building are showing signs of weathering. Replace these doors and hardware, as needed, over the next three to five years.

The windows and storefront are mix of 1980 and 1997 construction with the older units beginning to show signs of age. Generally, these windows are metal-framed, thermal-pane, fixed units. The original glazing should be scheduled for upgrade in the next two to three years. Replacement windows should be metal-framed, dual-pane, energy-efficient units that match the original design. There is also a section of Kalwall translucent clerestory panels on the southeastern corner of the newer hangar.

Interior Finishes/Systems

The interior finishes in this hangar are largely utilitarian, with polished concrete finishes in most of the main areas. Peripheral classrooms, offices, and shops have either carpet, vinyl tile, sheet vinyl flooring. While most of these finishes have already surpassed their useful service lives, the continued high traffic and usage of this facility will further degrade the newest sealed floors in the north hangar. To maintain an acceptable interior appearance, replace or reseal timeworn, stained, or damaged flooring with new commercial-grade finishes.

The painted walls and the painted pre-engineered steel in the high bays have a good general appearance. Painting is a cyclical activity and should be up for renewal every ten years. Selectively repaint the walls and structural elements, as needed, to maintain good aesthetics within this facility. Most of the interior areas of this facility do not have formal ceilings. However, some of the smaller rooms do have painted sheetrock finishes that should also be repainted in the upcoming years. The restroom walls are Fiberglass Reinforced Plastic (FRP) which should be replaced during the purview of this report.

The casework and related countertops are generally in good condition showing signs of normal use. However, the casework should be considered for replacement during the final years of this report due to lifecycle depletion. Interior standard and oversized metal doors have largely been upgraded and are in good working order. With the exception of replacing the panic hardware in the final years of this report, no interior door upgrades appear to be needed. Two of the three interior overhead coiling doors were added during the renovation project and are in good working order with no anticipated upgrades in the next ten years. The remaining overhead coiling door in room 104 was left in place and a set of swinging hollow-metal doors were added. The coiling door is operational but no longer used and should only be considered for replacement if desired by university personnel.

Accessibility

This facility has above average accessibility, with accessible entry doors, interior doors with compliant lever hardware, and accessible restrooms. However, the drinking fountain near the restrooms in the north hangar is not properly protected in an alcove or by cane barriers. It is recommended that it either be recessed or that proper cane barriers be added to ensure elimination of possible hazards.

Health

The eyewash and eyewash/shower combination stations in the facility are typically long-lived safety components and are in good condition. They are projected to be appropriate for sustained service well beyond the scope of this assessment.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures and a few unitary wall-mounted units connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

Current legislation requires that top stair landings have guardrails that prevent the passage of a four-inch diameter sphere and guardrails are required to be forty-two inches high. Although the railings along the mezzanine in the east hangar are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in guardrail design relative to current standards. Future renovation efforts should include comprehensive guard railing upgrades.

The Silent Knight addressable fire alarm control panel is in the mezzanine mechanical room above room 107. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on normal life expectancy and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also fully protected by an automated fire suppression system with both frangible glass-bulb and fusible link sprinkler heads. The relatively long-lived system appears to be in good condition and is anticipated to provide reliable service beyond the scope of this report, given normal testing, inspection and maintenance is completed as required per NFPA 25.

HVAC

This facility is on the campus hot water loop that is served by the boilers in Building 2. Hot water is circulated as the heating medium. The hangars have vertical delivery units for heating. The shop, office, and classroom spaces have an HVAC system that incorporates two variable volume, DX, two-pipe units, and a single dual-duct unit for the original building. Variable air volume (VAV) boxes with hot water reheat coils also serve this system. The controls for this system are Honeywell direct digital controls (DDC) applications updated in 2010. The terminal assembly components of the DDC should provide approximately 20 years of service. However, DDC components such as the software, field panels, and major instrumentation have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns. Updating these specific elements of the DDC should enhance facility maintenance and energy efficiency and take advantage of modern technologies such as Internet of Things

(IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set points where not already employed.

An air-cooled condenser facilitates the DX process for building cooling. This Trane unit has a 40-ton capacity. It should be anticipated that this air-cooled condenser will require replacement towards the end of the scope of this report. Cooling for the data room is provided by a ductless split DX system. This unit is currently in good working order. Utility fans in the mezzanine mechanical rooms address building exhaust requirements. Original HVAC equipment, such as the overhead vertical hydronic heating units, is in service beyond expected lifecycle and due for modernization.

Electrical

Power from a utility-owned transformer is fed through the Square D main disconnect on the western exterior to a Siemens main switchboard in the north hangar custodial closet. The 277/480 volt main switchboard has a rated capacity of 1,000 amps. Power is then fed to the secondary electrical distribution network using multiple step-down dry-type transformers to provide 120/208 volt power where required. No modernization is anticipated over the next ten years.

Lighting throughout the facility consists of T8 fixtures and high bay LED in the hangars. Wall-mounted non-HID and LED fixtures illuminate the building exterior. Original recessed lighting illuminates the northwest entrance. The current lighting scheme seems to adequately address sensible lighting opportunities. Holistically speaking, lifecycle expectations, obsolescence, and the wide availability of LED lighting technology promote the planned replacement of all non-LED lighting. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve the east hangar AHUs only. The drives are obsolete. New VFDs will also resolve operational concerns that can result from an undesired failure. This planned approach will likely provide additional energy savings, promote equipment lifecycles, and deliver advanced technological capabilities afforded by devices that are more modern.

Emergency electrical service for this building is fed through two automatic transfer switches from the emergency generator near Building 2. The switches provide power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed throughout this facility by rigid copper piping. Where observable, sanitary waste, vent, and stormwater piping is cast-iron and minor lab-grade plastic. Both the supply and drain piping networks are original but appear to be in working condition with no discrepancies noted by facility personnel. The piping should continue to provide adequate service over the reporting timeline. A

residential, electric water heater, updated in 2016, generates domestic hot water. Two backflow preventer valves (BFPs) service the fire suppression and domestic water systems. The valves protect the public water system from cross contamination and generally have a 20-year lifecycle if tested and maintained properly. The fire suppression system BFP appears to be original and due for replacement. A utility air compressor, in the utility room on the northwest end of the original structure, is original and recommended for replacement.

The plumbing fixtures consist of a dual-level drinking fountain, tankless water closets, urinals, lavatories, and kitchen and janitor sinks. Several of these fixtures have, or will, surpass their useful service lives during the scope of this report. It is recommended that the drinking fountain, lavatory, and kitchen sinks be replaced with modern code-compliant applications as required.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Duluth, GA 30096

Project Manager

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carlm@isescorp.com

Date of Inspection

August 29, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	5,950	0	0	0	0	0	0	0	0	0	0	0	$5,950
EXTERIOR	0	0	0	361,781	0	0	391,969	0	6,044	0	0	0	0	446,162	$1,205,955
INTERIOR	0	0	0	562,552	0	0	0	25,928	0	0	0	12,503	0	81,762	$682,746
PLUMBING	0	0	0	73,410	0	0	0	0	6,137	0	0	0	0	0	$79,547
HVAC	0	0	0	109,418	0	0	58,128	0	0	0	0	427,323	0	0	$594,869
FIRE/LIFE SAFETY	0	9,311	0	0	0	0	0	0	0	0	0	0	0	154,368	$163,679
ELECTRICAL	0	0	0	37,614	0	0	0	0	0	0	0	0	0	269,784	$307,398
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$9,311	$5,950	$1,144,775	$0	$0	$450,097	$25,928	$12,181	$0	$0	$439,826	$0	$952,076	$3,040,145
TOTAL NONRECURRING PROJECT NEEDS			$15,261	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,024,883	

CURRENT REPLACEMENT VALUE	$14,247,000
FACILITY CONDITION NEEDS INDEX	0.21
FACILITY CONDITION INDEX	0.08

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
32,692	$3,040,145	$92.99

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$5,950	$0	$5,950
EXTERIOR	$0	$1,205,955	$1,205,955
INTERIOR	$0	$682,746	$682,746
PLUMBING	$0	$79,547	$79,547
HVAC	$0	$594,869	$594,869
FIRE/LIFE SAFETY	$9,311	$154,368	$163,679
ELECTRICAL	$0	$307,398	$307,398
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$15,261**	**$3,024,883**	**$3,040,145**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3060FS01	INTERIOR GUARD RAILING UPGRADES	C2020	2	Plant Adaption	9,311
3060AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	5,950
				TOTAL	**$15,261**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3060	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	1980			B2010	Deferred Renewal	184,762
3060	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW, 1980			B2030	Deferred Renewal	6,044
3060	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	NORTH OVRHD HANGAR			B2030	Deferred Renewal	14,587
3060	DR22	DOOR, EXTERIOR, SLIDING, POWERED, STEEL HANGAR, LOCK	NORTH LARGE ACCORDIAN			B2030	Deferred Renewal	72,303
3060	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	NORTH OVRHD HANGAR			B2030	Deferred Renewal	2,095
3060	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL			B2030	Deferred Renewal	17,982
3060	DR36	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL			B2030	Deferred Renewal	2,374
3060	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	Deferred Renewal	4,748
3060	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	1980 ROOF			B3010	Deferred Renewal	25,579
3060	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	1997 ROOF			B3010	Deferred Renewal	31,306
3060	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	434,281
3060	IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION			RESTROOMS	C3010	Deferred Renewal	18,206
3060	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			OFFICES	C3020	Deferred Renewal	3,455
3060	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			CLSRMS	C3020	Deferred Renewal	40,536
3060	IF04	FLOORING - VINYL SHEET, STANDARD			RESTROOMS	C3020	Deferred Renewal	6,651

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3060	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			SHOP, EAST HANGAR	C3020	Deferred Renewal	59,424
3060	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	773
3060	FX04	PLUMBING FIXTURE - SINK, KITCHEN	ACID PROOF			D2010	Deferred Renewal	2,318
3060	BF05	BACKFLOW PREVENTER (4-6 INCHES)	FIRE BFP	9482	M1-02	D2020	Deferred Renewal	12,272
3060	PG16	AIR COMPRESSOR - UTILITY (>5 HP)	UAC	1862	M1-01	D2090	Deferred Renewal	58,048
3060	AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	A-1	1858	MEZZ, NORTH HANGAR	D3040	Deferred Renewal	19,228
3060	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	A-1 RF	1859	MEZZ, NORTH HANGAR	D3040	Deferred Renewal	1,321
3060	HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	VERT DELIV UNIT HTR		OVHD, N HANGAR	D3040	Deferred Renewal	19,581
3060	HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	VERT DELIV UNIT HTR		OVHD, E HANGAR	D3040	Deferred Renewal	24,477
3060	PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP1	1851	MEZZ, NORTH HANGAR	D3040	Deferred Renewal	22,406
3060	PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP2	1854	MEZZ, NORTH HANGAR	D3040	Deferred Renewal	22,406
3060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	ASU-2 SF VFD	9483	MEZZ, EAST HANGAR	D5010	Deferred Renewal	2,180
3060	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 RF VFD	1824	MEZZ, EAST HANGAR	D5010	Deferred Renewal	3,554
3060	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 SF VFD	1823	MEZZ, EAST HANGAR	D5010	Deferred Renewal	5,554
3060	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	ORIG			D5020	Deferred Renewal	5,492

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3060	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	ORIG			D5020	Deferred Renewal	20,833
3060	WN05	GLASS, STOREFRONT	NW ENTRANCE			B2010	2020	20,169
3060	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	NORTH HANGAR			B2020	2020	72,706
3060	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW, 1997			B2030	2020	12,039
3060	RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED, 1980			B3010	2020	287,054
3060	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-2	9484	MEZZ, NORTH HANGAR	D3040	2020	5,466
3060	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-1	1857	MEZZ, NORTH HANGAR	D3040	2020	5,466
3060	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2020	30,819
3060	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2020	16,376
3060	IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				C3030	2021	25,928
3060	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW, 1997			B2030	2022	6,044
3060	DF01	DRINKING FOUNTAIN, DUAL-LEVEL				D2010	2022	2,694
3060	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				D2010	2022	3,443
3060	DR03	DOOR - OVERHEAD, INTERIOR	NOT IN USE			C1020	2025	12,503
3060	HU03	CONDENSER - REFRIGERANT, AIR-COOLED (35-75 TON)	CNDR1	1790	W EXTERIOR	D3030	2025	36,007
3060	HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	NORTH HANGAR			D3040	2025	391,316

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3060	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	1997			B2010	2027	277,143
3060	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	EAST LARGE HANGAR DR			B2030	2027	151,076
3060	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	EAST OVRHD HANGAR			B2030	2027	13,753
3060	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	EAST OVRHD HANGAR			B2030	2027	2,095
3060	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	EAST LARGE HANGAR DR			B2030	2027	2,095
3060	DR26	DOOR PANIC HARDWARE, INTERIOR				C1020	2027	45,105
3060	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				C1030	2027	16,826
3060	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			NORTH HANGAR	C3020	2027	19,831
3060	FA01	FIRE ALARM SYSTEM - DEVICES			MEZZ, EAST HANGAR	D4030	2027	140,511
3060	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS		FACP	MEZZ, EAST HANGAR	D4030	2027	13,857
3060	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	2027	269,784
							TOTAL	**$3,024,883**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	3060FS01	INTERIOR GUARD RAILING UPGRADES	2	$9,311
2	3060AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$5,950
		TOTAL FOR PLANT ADAPTION		**$15,261**
		GRAND TOTAL:		**$15,261**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	3060AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$5,950
				TOTAL FOR ACCESSIBILITY	**$5,950**
1	3060FS01	2	Plant Adaption	INTERIOR GUARD RAILING UPGRADES	$9,311
				TOTAL FOR FIRE/LIFE SAFETY	**$9,311**
				GRAND TOTAL:	**$15,261**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INTERIOR GUARD RAILING UPGRADES

Project Number:	3060FS01
Priority Sequence:	1
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	9/24/2018

Category Code: FS5E

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	STAIRS AND RAILING

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Item Only: Floor(s) M
ADAAG	505		

Description

Current legislation requires that top stair landings have guardrails that prevent the passage of a four-inch diameter sphere and that guardrails be forty-two inches high. Although the railings along the mezzanine level in the east hangar are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in guardrail design relative to current standards. Future renovation efforts should include comprehensive guard railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	80	$45.53	$3,642	$38.05	$3,044	$6,686
			Base Material/Labor Costs	**$3,642**		**$3,044**	
			Indexed Material/Labor Costs	**$3,621**		**$3,068**	**$6,689**
						Construction Mark Up at 20.0%	**$1,338**
						Original Construction Cost	**$8,027**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$8,027**
						Professional Fees at 16.0%	**$1,284**
						TOTAL PROJECT COST	**$9,311**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	3060AC01	**Category Code:** AC3F	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1

Description

The drinking fountain near the restrooms in the north hangar is not properly protected in an alcove or by cane barriers. It is recommended that this drinking fountain either be recessed or that proper cane barriers be added to ensure elimination of possible hazards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$932**		**$3,321**	
			Indexed Material/Labor Costs	**$927**		**$3,348**	**$4,275**
					Construction Mark Up at 20.0%		**$855**
					Original Construction Cost		**$5,130**
Date of Original Estimate: 9/24/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$5,130**
					Professional Fees at 16.0%		**$821**
					TOTAL PROJECT COST		**$5,950**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	1980			13,580	SF	$184,762	1980	30	5	DR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	1997			20,370	SF	$277,143	1997	30		2027
WN05	GLASS, STOREFRONT	NW ENTRANCE			160	SF	$20,169	1980	40		2020
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	NORTH HANGAR			450	SF	$72,706	1980	40		2020
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	EAST HANGAR			450	SF	$72,706	1997	40		2037
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW, 1980			2	LEAF	$6,044	1980	25	10	DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW, 1997			2	LEAF	$6,044	1997	25		2022
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW, 1997			2	LEAF	$4,013	1997	40		2037
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW, 1997			6	LEAF	$12,039	1980	40		2020
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW, 1997			13	LEAF	$26,085	1997	40		2037
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	NORTH OVRHD HANGAR			140	SF	$14,587	1980	30	5	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	EAST OVRHD HANGAR			132	SF	$13,753	1997	30		2027
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	EAST LARGE HANGAR DR			1,450	SF	$151,076	1997	30		2027
DR22	DOOR, EXTERIOR, SLIDING, POWERED, STEEL HANGAR, LOCK	NORTH LARGE ACCORDIAN			728	SF	$72,303	1980	30	5	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	NORTH OVRHD HANGAR			1	EA	$2,095	1980	30	5	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	EAST OVRHD HANGAR			1	EA	$2,095	1997	30		2027
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	EAST LARGE HANGAR DR			1	EA	$2,095	1997	30		2027
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL			19	EA	$17,982	1997	12	6	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			4	EA	$4,748	1997	12	6	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL			2	EA	$2,374	1997	12	6	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED, 1980			14,000	SF	$287,054	1980	40		2020
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED, 1997			21,000	SF	$430,581	1997	40		2037
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	1980 ROOF			1,340	LF	$25,579	1997	20		DR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	1997 ROOF			1,640	LF	$31,306	1997	20		DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW, 1997			38	LEAF	$139,404	1997	60		2057
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW, 1980			5	LEAF	$18,343	1980	60		2040
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW, 1997			16	LEAF	$58,697	1997	60		2057
DR03	DOOR - OVERHEAD, INTERIOR	HANGAR			242	SF	$25,214	1997	45		2042
DR03	DOOR - OVERHEAD, INTERIOR	TOOL RM			48	SF	$5,001	1997	45		2042
DR03	DOOR - OVERHEAD, INTERIOR	NOT IN USE			120	SF	$12,503	1980	45		2025
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				21	EA	$15,811	1997	35		2032

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR26	DOOR PANIC HARDWARE, INTERIOR				38	EA	$45,105	1997	30		2027
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				30	LF	$16,826	1997	30		2027
IW01	WALL FINISH - APPLIED, STANDARD				155,600	SF	$434,281	1997	12	6	DR
IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION			RESTROOMS	1,570	SF	$18,206	1997	20		DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			OFFICES	290	SF	$3,455	1997	12	6	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			CLSRMS	5,890	SF	$40,536	1997	20		DR
IF04	FLOORING - VINYL SHEET, STANDARD			RESTROOMS	590	SF	$6,651	1997	15	3	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			SHOP, EAST HANGAR	16,990	SF	$59,424	1997	10	8	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			NORTH HANGAR	5,670	SF	$19,831	2017	10		2027
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				9,290	SF	$25,928	1997	24		2021
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	$2,694	1997	25		2022
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				4	EA	$3,443	1997	25		2022
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	$773	1997	20		DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	ACID PROOF			2	EA	$2,318	1997	20		DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	$4,993	1997	50		2047
FX10	PLUMBING FIXTURE - URINAL				2	EA	$2,157	1997	35		2032

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				6	EA	$10,170	1997	35		2032
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH				2	EA	$2,160	2000	35		2035
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH				1	EA	$1,539	2000	35		2035
BF02	BACKFLOW PREVENTER (1-2 INCHES)	DW BFP	9481	M1-02	1	EA	$2,235	2017	20		2037
BF05	BACKFLOW PREVENTER (4-6 INCHES)	FIRE BFP	9482	M1-02	1	EA	$12,272	1980	20	17	DR
PS02	SUPPLY PIPING SYSTEM - CLASSROOM	NORTH HANGAR			11,000	SF	$125,960	1980	50		2030
PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY	EAST HANGAR			21,692	SF	$95,401	1997	50		2047
WH24	WATER HEATER - RESIDENTIAL, ELECTRIC (46-100 GAL)	DWH1	5768	M1-02	50	GAL	$1,658	2016	15		2031
PD02	DRAIN PIPING SYSTEM - CLASSROOM	NORTH HANGAR			11,000	SF	$188,983	1980	60		2040
PD20	DRAIN PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY	EAST HANGAR			21,692	SF	$143,064	1997	60		2057
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	UAC	1862	M1-01	30	HP	$58,048	1980	25	12	DR
HU03	CONDENSER - REFRIGERANT, AIR-COOLED (35-75 TON)	CNDR1	1790	W EXTERIOR	40	TON	$36,007	2000	25		2025
HU19	DUCTLESS DX SPLIT SYSTEM (>2 TON)	DDXS1	1704, 9342	MEZZ, EAST HANGAR	3	TON	$4,457	2012	25		2037
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	A-1	1858	MEZZ, NORTH HANGAR	2	HP	$19,228	1980	35	2	DR
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	ASU-2	1820	MEZZ, EAST HANGAR	3	HP	$23,495	1997	35		2032
AH07	AIR HANDLING UNIT - INDOOR (9-12 HP)	ASU-1	1826	MEZZ, EAST HANGAR	10	HP	$76,848	1997	35		2032

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	ASU-1 RF	1825	MEZZ, EAST HANGAR	8	HP	$8,453	1997	35		2032
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	ASU-2 RF	1821	MEZZ, EAST HANGAR	3	HP	$3,963	1997	35		2032
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	A-1 RF	1859	MEZZ, NORTH HANGAR	1	HP	$1,321	1980	35	2	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-1	1822	MEZZ, EAST HANGAR	1	HP	$1,640	2014	40		2054
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-2	9484	MEZZ, NORTH HANGAR	1	HP	$5,466	1980	40		2020
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-1	1857	MEZZ, NORTH HANGAR	1	HP	$5,466	1980	40		2020
HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	VERT DELIV UNIT HTR		OVHD, N HANGAR	1,116	MBH	$19,581	1980	15	22	DR
HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	VERT DELIV UNIT HTR		OVHD, E HANGAR	1,395	MBH	$24,477	1997	15	5	DR
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	NORTH HANGAR			11,000	SF	$391,316	1980	45		2025
HV20	HVAC DISTRIBUTION NETWORKS - SHOPS / TRADES, DRY LABORATORY	EAST HANGAR			21,692	SF	$379,667	1997	45		2042
PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP1	1851	MEZZ, NORTH HANGAR	15	HP	$22,406	1980	35	2	DR
PH02	PUMP - ELECTRIC (10 - 15 HP)	HWP2	1854	MEZZ, NORTH HANGAR	15	HP	$22,406	1980	35	2	DR
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				32,692	SF	$110,753	2010	20		2030
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				32,692	SF	$30,819	2010	10		2020
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				32,692	SF	$16,376	2010	10		2020

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FS01	FIRE SPRINKLER SYSTEM - WET			THROUGHOUT	32,692	SF	$442,278	1980	80		2060
FA01	FIRE ALARM SYSTEM - DEVICES			MEZZ, EAST HANGAR	32,692	SF	$140,511	2009	18		2027
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS		FACP	MEZZ, EAST HANGAR	1	EA	$13,857	2009	18		2027
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	NORTH HANGAR			11,000	SF	$273,164	1980	50		2030
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	EAST HANGAR			21,692	SF	$368,645	1997	50		2047
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	SDP	1788, 6737	J1-01	1,000	AMP	$74,984	1997	40		2037
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	ASU-2 SF VFD	9483	MEZZ, EAST HANGAR	3	HP	$2,180	1997	15	5	DR
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 SF VFD	1823	MEZZ, EAST HANGAR	10	HP	$5,554	1997	15	5	DR
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 RF VFD	1824	MEZZ, EAST HANGAR	8	HP	$3,554	1997	15	5	DR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	ORIG			6	EA	$5,492	1997	20		DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	ORIG			15	EA	$20,833	1997	20		DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	LED			6	EA	$4,630	2017	20		2037
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				19,692	SF	$269,784	2008	20	-1	2027
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	N AND E HANGARS			13,000	SF	$68,663	2016	20		2036
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	ATS 4LS6	9127	114	40	AMP	$3,480	2012	25		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS 4OS6	9126	114	80	AMP	$4,422	2012	25		2037

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$6,248,600				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	1980	13,580	SF	$184,762	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW, 1980	2	LEAF	$6,044	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	NORTH OVRHD HANGAR	140	SF	$14,587	DR
B2030	DOOR, EXTERIOR, SLIDING, POWERED, STEEL HANGAR, LOCK	NORTH LARGE ACCORDIAN	728	SF	$72,303	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	NORTH OVRHD HANGAR	1	EA	$2,095	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL	19	EA	$17,982	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	4	EA	$4,748	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL	2	EA	$2,374	DR
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	1980 ROOF	1,340	LF	$25,579	DR
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	1997 ROOF	1,640	LF	$31,306	DR
C3010	WALL FINISH - APPLIED, STANDARD		155,600	SF	$434,281	DR
C3010	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION		1,570	SF	$18,206	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		290	SF	$3,455	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		5,890	SF	$40,536	DR
C3020	FLOORING - VINYL SHEET, STANDARD		590	SF	$6,651	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		16,990	SF	$59,424	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$773	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	ACID PROOF	2	EA	$2,318	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2020	BACKFLOW PREVENTER (4-6 INCHES)	FIRE BFP	1	EA	$12,272	DR
D2090	AIR COMPRESSOR - UTILITY (>5 HP)	UAC	30	HP	$58,048	DR
D3040	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	A-1	2	HP	$19,228	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	A-1 RF	1	HP	$1,321	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	VERT DELIV UNIT HTR	1,116	MBH	$19,581	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	VERT DELIV UNIT HTR	1,395	MBH	$24,477	DR
D3040	PUMP - ELECTRIC (10 - 15 HP)	HWP1	15	HP	$22,406	DR
D3040	PUMP - ELECTRIC (10 - 15 HP)	HWP2	15	HP	$22,406	DR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	ASU-2 SF VFD	3	HP	$2,180	DR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 SF VFD	10	HP	$5,554	DR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 RF VFD	8	HP	$3,554	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	ORIG	6	EA	$5,492	DR
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	ORIG	15	EA	$20,833	DR
		TOTAL DEFERRED RENEWAL COST			**$1,144,775**	

No Projected Component Replacement Cost for Asset No. 3060 for 2018

No Projected Component Replacement Cost for Asset No. 3060 for 2019

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-2	1	HP	$5,799	2020
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-1	1	HP	$5,799	2020
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW, 1997	6	LEAF	$12,773	2020
B3010	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED, 1980	14,000	SF	$304,536	2020
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	NORTH HANGAR	450	SF	$77,134	2020
B2010	GLASS, STOREFRONT	NW ENTRANCE	160	SF	$21,398	2020
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		32,692	SF	$17,373	2020
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		32,692	SF	$32,696	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$477,508	

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3030	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD		9,290	SF	$28,333	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$28,333	

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2010	PLUMBING FIXTURE - LAVATORY, COUNTER		4	EA	$3,875	2022
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW, 1997	2	LEAF	$6,803	2022
D2010	DRINKING FOUNTAIN, DUAL-LEVEL		1	EA	$3,032	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$13,710**	

No Projected Component Replacement Cost for Asset No. 3060 for 2023

No Projected Component Replacement Cost for Asset No. 3060 for 2024

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C1020	DOOR - OVERHEAD, INTERIOR	NOT IN USE	120	SF	$15,377	2025
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (35-75 TON)	CNDR1	40	TON	$44,284	2025
D3040	HVAC DISTRIBUTION NETWORKS - CLASSROOM	NORTH HANGAR	11,000	SF	$481,270	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$540,930**	

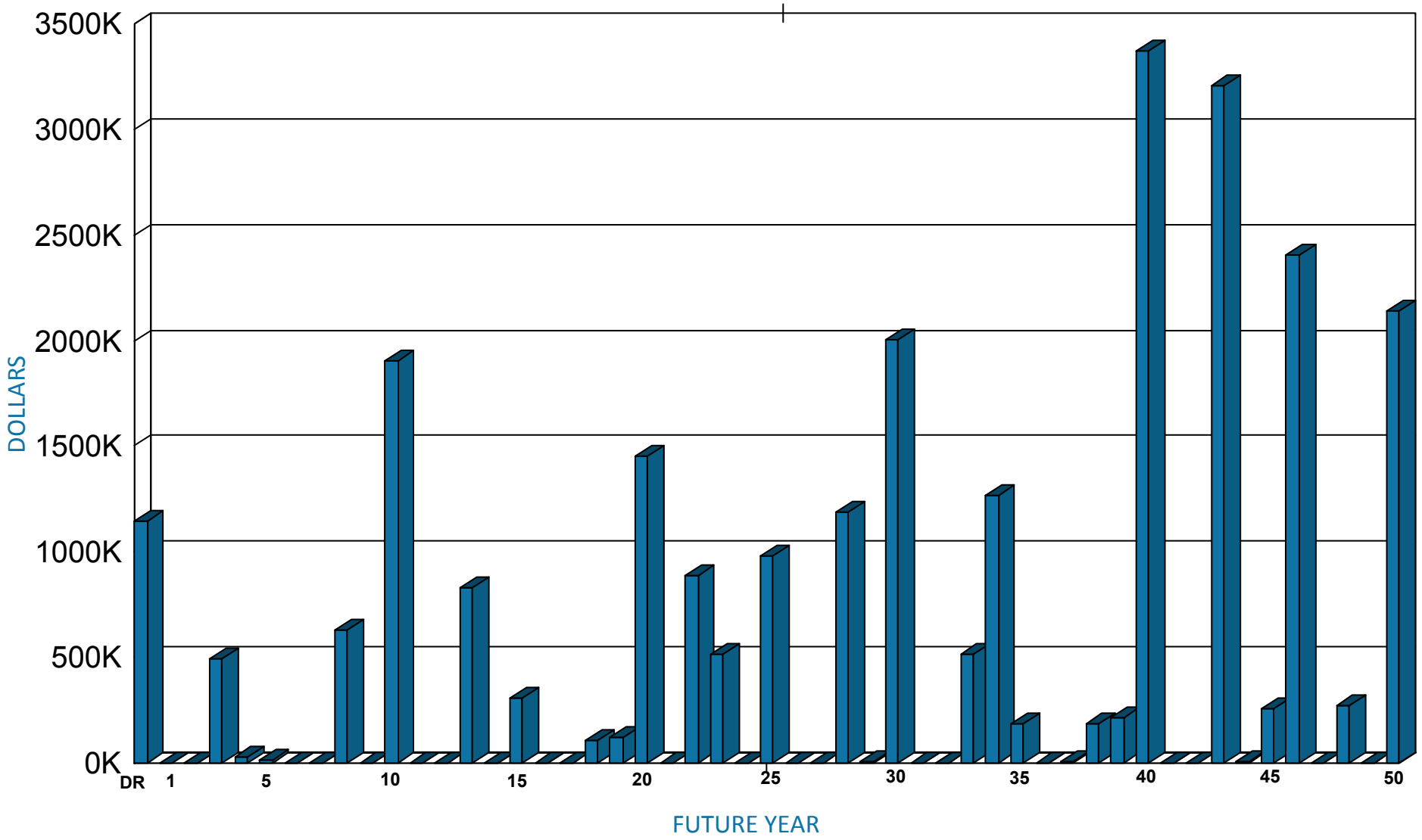
No Projected Component Replacement Cost for Asset No. 3060 for 2026

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		5,670	SF	$25,876	2027
C1020	DOOR PANIC HARDWARE, INTERIOR		38	EA	$58,851	2027
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		30	LF	$21,955	2027
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	EAST OVRHD HANGAR	132	SF	$17,945	2027
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	EAST LARGE HANGAR DR	1,450	SF	$197,120	2027
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	EAST OVRHD HANGAR	1	EA	$2,733	2027
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	EAST LARGE HANGAR DR	1	EA	$2,733	2027
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED	1997	20,370	SF	$361,609	2027
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		19,692	SF	$352,007	2027
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS		1	EA	$18,080	2027
D4030	FIRE ALARM SYSTEM - DEVICES		32,692	SF	$183,335	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,242,244**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



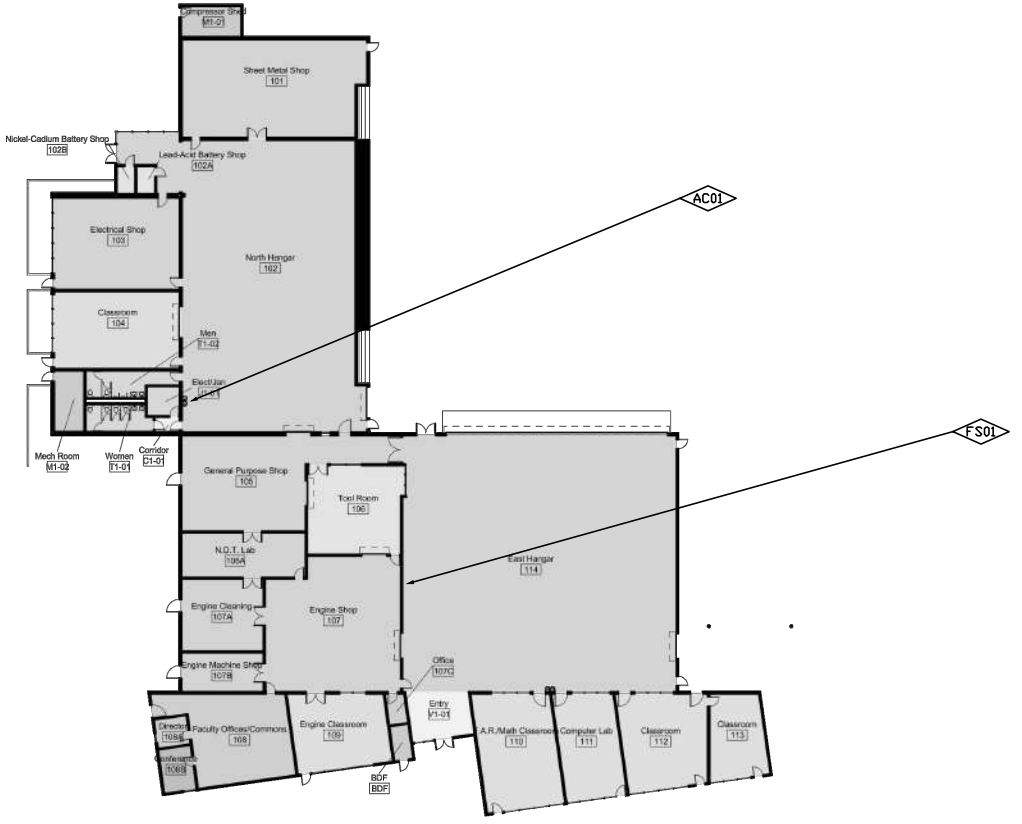
Average Annual Renewal Cost per SF $7.08

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



BUILDING
6

BLDG NO. 3060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/13/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 1

SECTION 6

PHOTOGRAPHS

3060001a 8/29/2016
Interior overhead coiling door
Engine shop 107

3060001e 8/29/2018
One of two, variable volume, DX, two-pipe AHUs
Mezzanine, room 107

3060002a 8/29/2016
Sealed concrete floor and painted surfaces
Engine shop 107

3060002e 8/29/2018
Typical VAV reheat unit in the overhead
Mezzanine, room 107

3060003a 8/29/2016
Concrete floor, painted walls, and rolled glass insulation
Mezzanine

3060003e 8/29/2018
Fire alarm control system
Mezzanine, room 107

3060004a 8/29/2016

Dual-level drinking fountain

Hangar 102

3060004e 8/29/2018

High-bay, LED, pendent light fixtures

North hangar

3060005a 8/29/2016

Vinyl sheet flooring, FRP walls, and counter-mounted lavatories

Restroom T1-02

3060005e 8/29/2018

Original, constant volume, two-pipe AHU that is out of service

Mezzanine, room 102

3060006a 8/29/2016

Vinyl sheet flooring, FRP walls, and wall-mounted urinals

Restroom T1-02

3060006e 8/29/2018

Original utility-type exhaust fan

Mezzanine, room 102

3060007a 8/29/2016

Vinyl sheet flooring, FRP walls, and wall-mounted water closet

Restroom T1-02

3060007e 8/29/2018

HVAC controller field panel with electric and DDC system components

Mezzanine, room 102

3060008a 8/29/2016

Painted concrete floor

Hangar 102

3060008e 8/29/2018

Recently updated emergency eyewash system

First floor, room 102B

3060009a 8/29/2016

Acid proof sink

Room 102B

3060009e 8/29/2018

Residential, electric water heater and domestic and fire suppression backflow preventers

First floor, room M1-02

3060010a 8/29/2016
Vinyl tile floor and painted walls
Room 103

3060010e 8/29/2018
ITE secondary electrical panelboards and transformer
First floor, room J1-01

3060011a 8/29/2016
Concrete floor, painted walls, and rolled glass insulation
Room 101

3060011e 8/29/2018
Air-cooled condenser unit for building AHUs
West exterior

3060012a 8/29/2016
Painted concrete floor
Hangar 114

3060012e 8/29/2018
Main disconnect switchgear
West exterior

3060013a 8/29/2016

Folding overhead hangar door

Hangar 114

3060013e 8/29/2018

One of nine overhead vertical delivery unit heaters

Overhead in both hangars

3060014a 8/29/2016

Noncompliant railing

Hangar 114

3060014e 8/29/2018

Automatic transfer switches fed from exterior emergency generator

Mezzanine, east hangar

3060015a 8/29/2016

Vinyl tile floor and painted walls

Room 110

3060015e 8/29/2018

Ductless DX air-cooled condenser unit for BDF

Mezzanine, east hangar

3060016a 8/29/2016
Sealed concrete floor and painted surfaces
Room 107A

3060016e 8/29/2018
Original utility air compressor now out of service
Compressor shed, room M1-01

3060017a 8/29/2016
Glass and metal entrance doors
South elevation

3060017e 8/29/2018
Wall-mounted non-HID fixture for perimeter lighting
South elevation

3060018a 8/29/2016
Exterior metal surfaces and glazing
Southwest corner

3060018e 8/29/2018
Original, recessed HID fixtures
Northwest elevation

3060019a 8/29/2016
Hollow-metal mechanical door, metal siding, and glazing
West elevation

3060020a 8/29/2016
Metal siding and glazing
West elevation

3060021a 8/29/2016
Metal siding and larger hangar doors
Northeast elevation

3060022a 8/29/2016
Metal siding
East elevation

3060023a 8/29/2016
Metal siding and roofing
Southeast corner

3060024a 8/29/2016
Exterior finishes
South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3060
Asset Name	Building 6
Year Built or Last Energy Renovation	1980

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

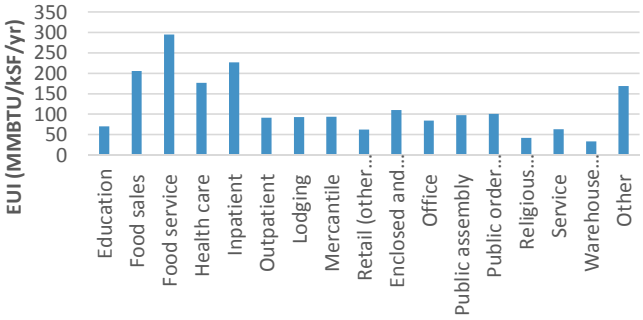
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

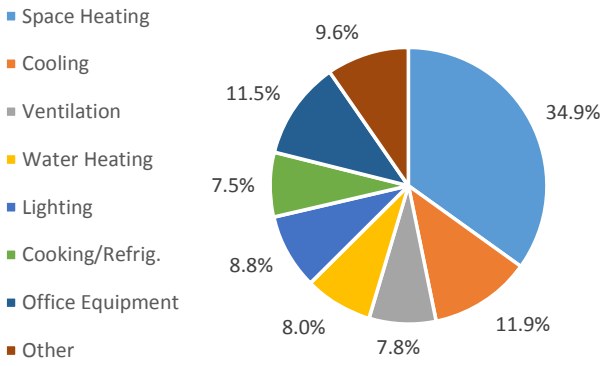


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
HVAC - Central Cooling	INSTALL AN ENERGY-EFFICIENT CHILLER. Energy-efficient chillers, including, but not limited to, magnetic bearing chillers, achieve higher efficiencies than conventional chillers. Research FEMP designated chillers to find the most energy-efficient options.	CAP
HVAC - Hydronic Dist. Network Insulation	INSULATE THE HVAC PIPING. Insulating HVAC piping reduces heat loss and decreases energy consumption.	CAP
HVAC - Air Dist. Network Insulation	INSULATE DUCTWORK. Insulating HVAC piping reduces heat loss and decreases energy consumption.	CAP
Electrical - Motor Efficiency	UPGRADE TO PREMIUM EFFICIENCY MOTORS. Premium efficiency motors operate more efficiently than standard or high efficiency motors and so reduce energy consumption and operating costs. A return on investment is usually realized within a few years.	O&M; LC/NC; CAP
Electrical - VFDs	INSTALL VARIABLE FREQUENCY DRIVES. Install VFDs on motors greater than 5 hp to reduce energy consumption by varying motor speed based on system demand.	O&M; LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 7
Asset 3070

Inspected August 28, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

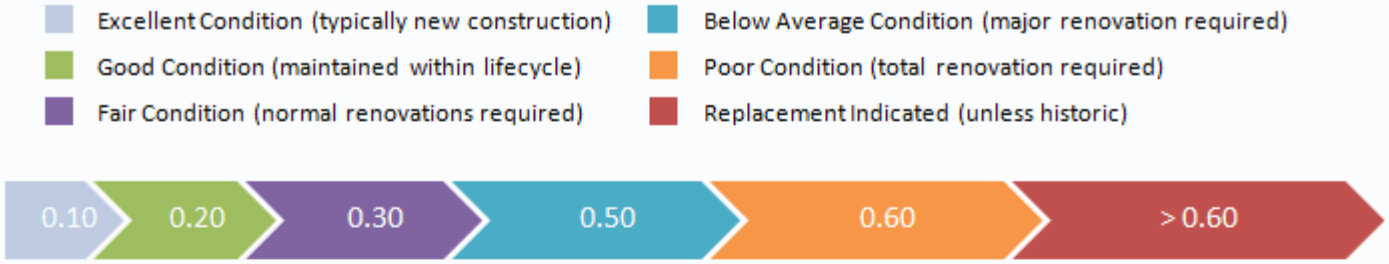
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

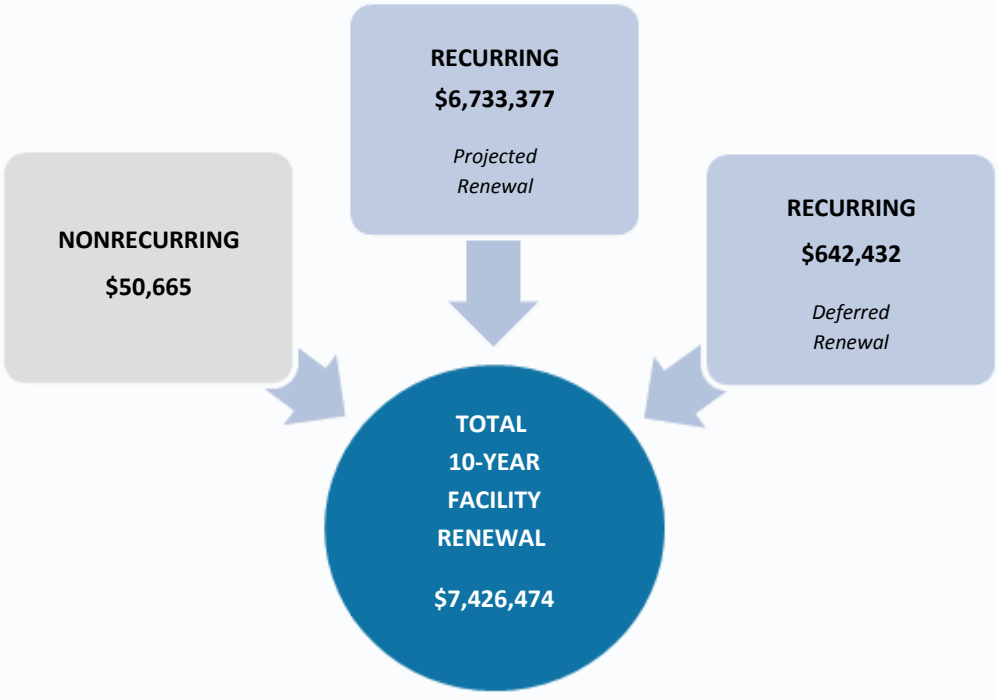
ASSET CODE	3070		
ASSET NAME	BUILDING 7	**CURRENT REPLACEMENT VALUE**	$62,940,000
ASSET USE	Laboratory	**FACILITY CONDITION NEEDS INDEX**	0.12
YEAR BUILT	1996	**FACILITY CONDITION INDEX**	0.01
GSF	121,585	**10-YEAR $/SF**	61.08
INSPECTION DATE	08/28/2018		

FCNI Scale

The FCNI for this asset is **0.12**



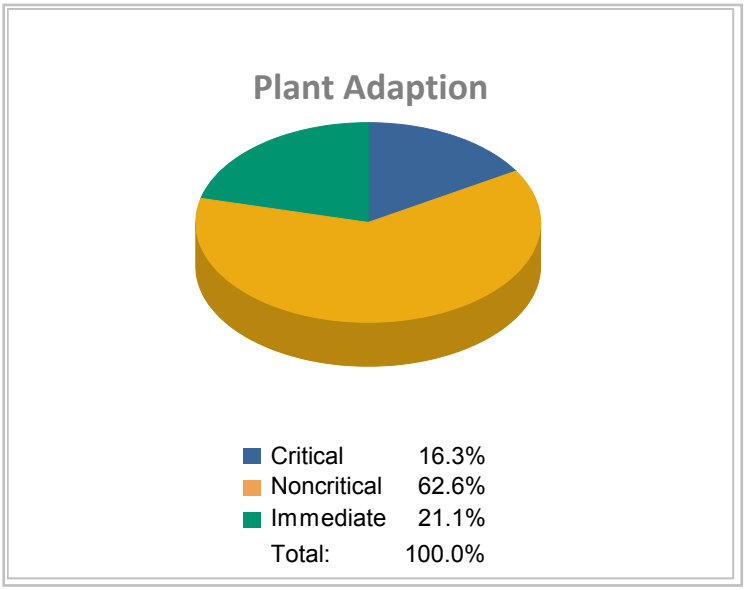
Total Facility Renewal Costs



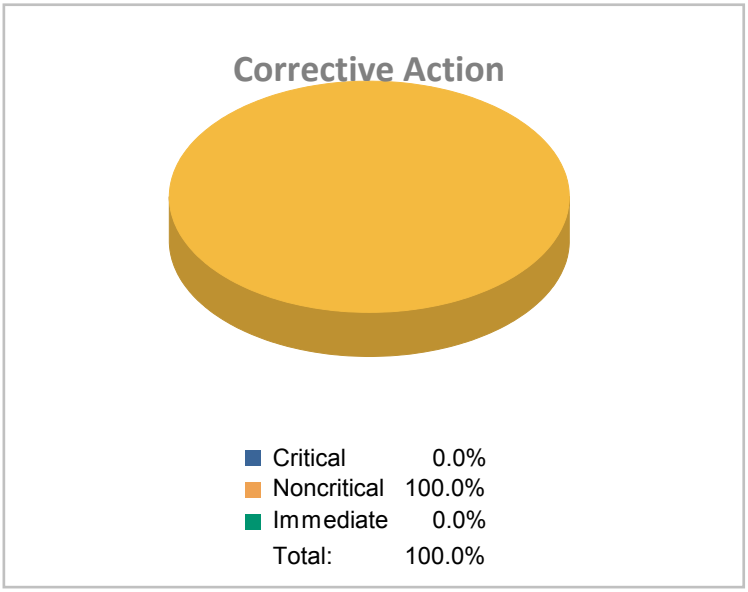
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$7,551**
2 - Critical	**$5,819**
3 - Noncritical	**$22,383**

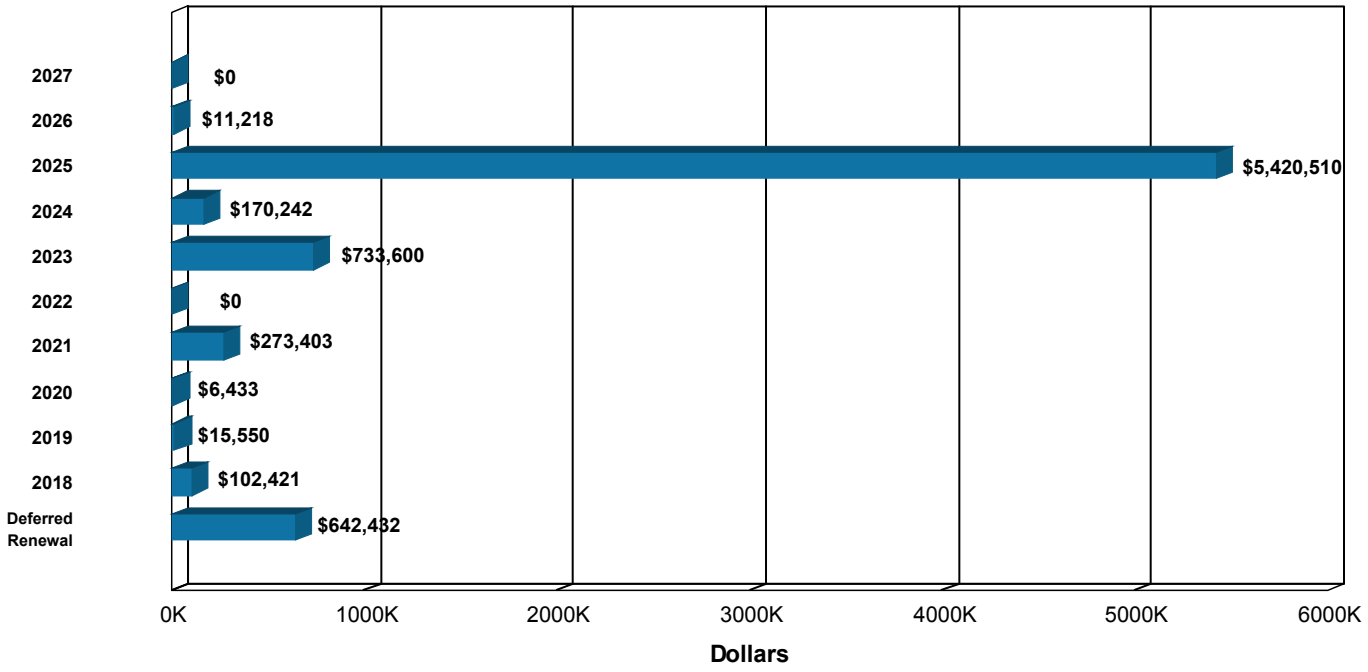


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$14,911**

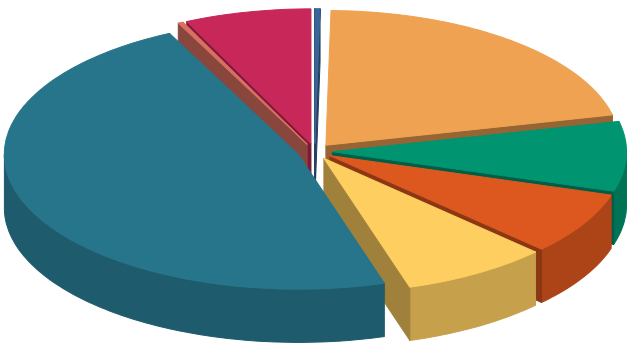


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$25,888	0%
Electrical	$1,554,113	21%
Exterior	$635,844	9%
Fire/Life Safety	$554,258	7%
Health	$0	0%
HVAC	$593,842	8%
Interiors	$3,527,193	47%
Plumbing	$19,368	0%
Site	$0	0%
Vert. Trans.	$515,967	7%
TOTAL	**$7,426,474**	

ASSET SUMMARY

Building 7 is a two-story collegiate laboratory on the Portland Community College, Rock Creek campus. Constructed in 1996, Building 7 has a combination of offices, laboratories, classrooms, and support spaces on each of the two main floors. There is a mechanical penthouse on the southern roof and a smaller mechanical penthouse on the northern roof. The building is divided into two separate structures that are linked by a vaulted corridor and an inviting open ended courtyard between the two main structures. The original 1996 northern building was renovated in 2004 when the southern wing was added. More renovations and additions occurred in 2013 when the eastern breezeway was enclosed by a glass curtain wall adding several new classrooms and support spaces. Currently, the building totals approximately 121,585 gross square feet.

Information for this report was gathered during a site visit conducted on August, 28, 2018.

Site

The surrounding site and open western courtyard are well planted and appear to be well maintained. The concrete walkways and plazas are also in good overall condition and no site upgrades are recommended at this time.

Exterior Structure

The original flat, modified bitumen built-up roof has surpassed its useful service life and should be scheduled for near-term upgrade. Replace this roof with a new built-up roof and cap sheet and include all new flashing. The flat, built-up roof with spray coating on the 2004 addition is starting to deteriorate and should be renewed during the purview of this report. The associated gutter systems for both roofing applications should be included in these roofing projects. The remaining roofing systems including the ballasted section, metal roofing, gutters, and skylights are in good to excellent condition and should be serviceable for the next ten years.

The exterior envelope is mostly in good condition. The painted EIFS, brick veneer, and metal surfaces are generally in good condition, partly due to the renovations and additions completed within the last few years. With normal routine maintenance, these surfaces will outlast the timeframe of this report. The penthouse on the 1996 building has significant leakage issues. It is recommended that the EIFS be repaired and sealed to prevent water intrusion concerns. Additionally, the elevated walk on the west end of the open courtyard is in poor condition. The railing is not compliant with current regulations and is addressed further in the Fire/Life Safety Section. The paint on the current rails is chipping and several areas are starting to rust. It is recommended that these surfaces be sanded, primed, and coated with at least two coats of outdoor rust resistant paint.

The metal-framed, thermal-pane windows, storefront, and curtain wall systems have a good overall appearance, and no upgrades appear to be warranted at this time. The newer primary glass entry doors

are still in good working order, and the secondary doors are also adequate at this time. The original building has two glass entry doors that date to 1996. These doors, along with most of the exterior door hardware, will surpass their useful service life in the next ten years and should be scheduled for replacement.

Interior Finishes/Systems

Areas like offices and classrooms are generally carpeted. This carpeting is in average to good condition but due to a short lifecycle, it is anticipated that replacement should be scheduled within the next six to ten years. Select a suitable grade of commercial carpeting for this new application. The epoxy and vinyl sheet finishes in the various labs are in adequate condition but will also require replacement within the purview of this report. Additionally, the finished concrete floors in the corridors and most of the labs are a good, low maintenance flooring finish, they should be scheduled for near-term replacement to maintain the safety and slip free environment required in these areas.

The western corridors in the 2004 addition have slate flooring and a stain-grade wood wainscot detail. The main eastern corridor has a terrazzo finish. These finishes are in very good condition and should be adequate for the next ten or more years. Ceramic floor and wall tile in the various first and second floor restrooms have a good appearance, and no interior finish upgrades are recommended for these areas at this time.

The painted sheetrock walls and partitions have a good appearance, but should be refinished within the next ten years in order to maintain a good general aesthetic throughout the building. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use. Minor repairs should be completed before work begins. The ceiling are a mix of suspended tile and painted finishes. These finishes are mostly in good condition and isolated concerns should be addressed under routine maintenance.

The interior primary and secondary door assemblies are in good working order and have accessible door hardware sets. No interior door upgrades appear to be warranted at this time. The lab and cabinetry casework are in good overall condition, but standard use and age will require selective finish replacement to a portion of the older cabinets over the next six to ten years.

Accessibility

The building is accessible at grade and a compliant elevator provides access to both levels. Restrooms on each floor have been upgraded to include ADA-compliant fixtures and clearances. Both levels also have compliant door hardware and Braille signage. However, current legislation requires that building amenities be generally accessible to all persons. The configuration of the service counters in room 202 and the two single-level drinking fountains are a barrier to accessibility. A wheelchair-accessible section should be incorporated into each noncompliant service counter and all single-level drinking fountains should be replaced with dual-level units that are properly recessed or protected by cane barriers.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail design relative to twelve inch horizontally requirements at the landings. Future renovation efforts should include addition of these extensions to meet current standards.

Health

There are multiple eyewash and eyewash/shower combination stations in the lab areas. These typically long-lived safety components are in good condition and projected to be appropriate for sustained service well beyond the scope of this assessment.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

Current legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the exterior walkway and stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

The Silent Knight addressable fire alarm control panel is in room IDF-1. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on normal life expectancy and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also fully protected by an automated fire suppression system with frangible glass-bulb type sprinkler heads. The relatively long-lived system appears to be in good condition and is anticipated to provide reliable service beyond the scope of this report, given normal testing, inspection, and maintenance is completed as required per NFPA 25.

HVAC

The primary sources of heating, cooling, and ventilation are provided by air handling units (AHUs), three overhead fan coil units (FCUs), two DX split systems, VAV reheat components, two heat recovery units, ductwork, and a Honeywell direct digital control (DDC) system. The terminal assembly components of the DDC should provide approximately 20 years of service. However, DDC components such as the

software, field panels, and major instrumentation have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns. Updating these specific elements of the DDC should enhance facility maintenance and energy efficiency and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set points where not already employed.

Boilers in room 301 generate heating hot water for this building. This heating medium is distributed and circulated to the AHU heating coils and other hydronic heating components by heating hot water pumps. Four single-zone, variable-volume, four-pipe AHUs provide the bulk of facility conditioned tempered air using chilled water that is generated by three rooftop chiller units and circulated by chilled water pumps. Two plate-frame heat exchangers in Penthouse 2 provide an alternate method of cooling and heating during low occupancy timeframes. This reduces both boiler and chiller operational requirements thereby extending their lifecycle and decreasing building utility costs. Two heat recovery units (HRUs) equipped with chilled water coils were added as part of the addition. Two ductless DX VRV systems with five total remote evaporator units and three overhead mounted FCUs provide supplemental HVAC to IT and mechanical spaces. All of the equipment appears to be in working order and, with the exception of the two original gas-fired boilers, no upgrades are anticipated over the next ten years.

A rooftop centrifugal exhaust fan, small wall-mounted propeller fans, and commercial turbine roof ventilators on the addition address general facility exhaust and ventilation requirements. Although the ventilators free-wheel throughout the day, they only pull air flow through the addition during the evening hours. During this time, the DDC system automatically opens the second level windows on the northeast side of the building to minimize AHU operations. Inline centrifugal fans address the lab fume hoods. The majority of these fans are original but there have been some updates. Overall, the exhaust and ventilation equipment appears to be in good to fair working order and should provide adequate service over the next ten years.

Electrical

Electrical power from a utility-owned 1,000 kVA transformer is fed to three main switchboards in the main electrical room on the first floor. The 277/480 volt Square D and Siemens switchboards have rated capacities between 1,200 and 2,000 amps. Power is then fed to the secondary electrical distribution network using multiple step-down dry-type transformers to provide 120/208 volt power where required. The majority of the secondary network is comprised of Square D electrical panelboards and a single seven-section motor controller, with approximately 20 percent of the system updated in 2013 as part of the addition. Emergency electrical service for this building is fed through two automatic transfer switches. The switches provide power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Lighting throughout the facility consists of T8, decorative pendent CFL, and some minor LED fixtures where older lighting has failed. Overhead-mounted HID fixtures along the wing connector platform and LED fixtures at entrances illuminate the exterior. With the exception of the rooftop areas around the two penthouses, the current lighting scheme seems to adequately address sensible lighting

opportunities. Additional illumination should be considered on the exterior walls of both penthouses. Holistically speaking, lifecycle expectations, obsolescence, and the wide availability of LED lighting technology promote the planned replacement of all non-LED lighting. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve AHUs and media pumps in the penthouse and mechanical spaces. The majority of the VFDs should provide reliable service over the next ten years. Older, smaller units should be modernized over the next ten years to avoid potential parts obsolescence and potential operational concerns that result from an undesired failure. This planned approach will likely provide additional energy savings, promote equipment lifecycles, and deliver advanced technological capabilities afforded by devices that are more modern.

Plumbing

Potable water is distributed by rigid copper piping. Where observable, sanitary waste, vent, and stormwater piping is cast-iron and lab-grade plastic. Both the supply and drain piping networks are original but appear to be in working condition with no discrepancies noted by facility personnel. The piping should continue to provide adequate service over the reporting timeline. Two residential, electric water heaters and a small commercial boiler generate and store domestic hot water. No replacements are anticipated over the next ten years. Facility supporting equipment such as a vacuum pump and utility air compressor were also noted. Both units are in working order. However, typical lifecycle expectations for vacuum systems suggests replacement for this unit within the reporting purview.

There are four total backflow preventer valves (BFPs). One is for fire suppression and three are for domestic water related systems. The valves protect the public water system from cross contamination and generally have a 20-year lifecycle if tested and maintained properly. Although the fire suppression system BFP casing is original, both it and the main domestic water BFP were recently tested and in good working order. The two smaller BFPs are also presumably in good working order but will reach the end of their expected lifecycle over the next ten years and will likely need to be replaced. The plumbing fixtures consist of tankless water closets, urinals, utility sinks, kitchen sinks, and lavatories. Most were updated in either 2004 or 2013 and are in excellent condition. The only plumbing upgrade expected in the next ten years is the replacement of the older kitchen sinks.

Vertical Transportation

Two hydraulic passenger elevators serve the facility. The units have a 3,000 to 4,000 pound capacity and transit two floors. Elevator one was modernized in 2004 with MCE controller components. Elevator two and a small 100 pound capacity dumbwaiter in the south wing are original and should be considered for replacement within the reporting window. While detailed elevator testing and inspection is not included in this assessment effort, the systems observed were in working condition and operating properly on the day of inspection.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

Carl Mason, PE, BSCP, M.ASCE
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carlm@isescorp.com

Date of Inspection

August 28, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	5,819	20,069	0	0	0	0	0	0	0	0	0	0	0	$25,888
EXTERIOR	0	0	14,911	473,055	102,421	0	0	6,044	0	1,909	0	37,504	0	0	$635,844
INTERIOR	0	0	0	144,591	0	0	0	0	0	0	31,242	3,340,142	11,218	0	$3,527,193
PLUMBING	0	0	0	503	0	0	0	0	0	0	18,865	0	0	0	$19,368
HVAC	0	0	0	0	0	0	0	0	0	473,708	120,135	0	0	0	$593,842
FIRE/LIFE SAFETY	7,551	0	0	0	0	0	0	0	0	0	0	546,708	0	0	$554,258
ELECTRICAL	0	0	2,315	24,283	0	15,550	6,433	9,375	0	0	0	1,496,157	0	0	$1,554,113
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	257,984	0	257,984	0	0	0	0	$515,967
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$7,551	$5,819	$37,295	$642,432	$102,421	$15,550	$6,433	$273,403	$0	$733,600	$170,242	$5,420,510	$11,218	$0	$7,426,474
TOTAL NONRECURRING PROJECT NEEDS			$50,665	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$7,375,809	

CURRENT REPLACEMENT VALUE	$62,940,000
FACILITY CONDITION NEEDS INDEX	0.12
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
121,585	$7,426,474	$61.08

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$25,888	$0	$25,888
EXTERIOR	$14,911	$620,933	$635,844
INTERIOR	$0	$3,527,193	$3,527,193
PLUMBING	$0	$19,368	$19,368
HVAC	$0	$593,842	$593,842
FIRE/LIFE SAFETY	$7,551	$546,708	$554,258
ELECTRICAL	$2,315	$1,551,798	$1,554,113
SITE	$0	$0	$0
VERT. TRANS	$0	$515,967	$515,967
HEALTH	$0	$0	$0
TOTALS	**$50,665**	**$7,375,809**	**$7,426,474**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3070FS01	EXTERIOR STAIR UPGRADES	C2020	1	Plant Adaption	7,551
3070AC02	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	5,819
3070ES01	EIFS RESTORATION	B2010	3	Corrective Action	14,911
3070AC01	SERVICE COUNTER & DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	20,069
3070EL01	ADD EXTERIOR LIGHTING	D5020	3	Plant Adaption	2,315
				TOTAL	**$50,665**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3070	EF03	EXTERIOR STAIR TREAD AND LANDING FINISH				B1010	Deferred Renewal	7,871
3070	EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD				B2010	Deferred Renewal	6,600
3070	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	2004 HM DRS			B2030	Deferred Renewal	2,839
3070	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	1996 HM DRS			B2030	Deferred Renewal	3,786
3070	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT OLD			B3010	Deferred Renewal	449,096
3070	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	MOD BIT OLD			B3010	Deferred Renewal	2,863
3070	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			LABS	C3020	Deferred Renewal	144,591
3070	BF01	BACKFLOW PREVENTER (<=1 INCH)	AUTOCLAVE BFP	2308	122	D2020	Deferred Renewal	503
3070	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU3 RF	2223	PTHS 2	D5010	Deferred Renewal	3,633
3070	VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU3 SF	2220	PTHS 2	D5010	Deferred Renewal	12,316
3070	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			PERIMETER & ENTRANCES	D5020	Deferred Renewal	8,333
3070	RR05	ROOF - SPRAYED POLY FOAM	SPRAY ROOF			B3010	2018	102,421
3070	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU4 RF	2160	M2-3	D5010	2019	4,443
3070	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-1	2241	301	D5010	2019	5,554
3070	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-2	2242	301	D5010	2019	5,554
3070	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	GEF1	2219	PTHS 2	D5010	2020	6,433

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3070	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	1996 DRS, PANIC HDW			B2030	2021	6,044
3070	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 2	4380	M1-2	D1010	2021	257,984
3070	VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU4 SF	2161	M2-3	D5010	2021	9,375
3070	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	SPRAY ROOF			B3010	2023	1,909
3070	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	DUMBWAITER	2115	122	D1010	2023	257,984
3070	BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				D3060	2023	325,054
3070	BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				D3060	2023	148,653
3070	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			VET TECH LAB 138	C3020	2024	7,089
3070	IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE			RMS 225 & 217B	C3020	2024	24,154
3070	FX04	PLUMBING FIXTURE - SINK, KITCHEN	2004 INSTALL			D2010	2024	1,545
3070	BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP		301	D2020	2024	805
3070	PG06	VACUUM PUMP - ROTARY VANE (>2<=4 HP)	VP-1	2168 / 2169	M2-3	D2090	2024	16,515
3070	BL27	BOILER - GAS (1500-2400 MBH)	B-1	2235	301	D3020	2024	60,067
3070	BL27	BOILER - GAS (1500-2400 MBH)	B-2	2237	301	D3020	2024	60,067
3070	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	PUSH BAR			B2030	2025	1,893
3070	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DOORS			B2030	2025	35,611

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3070	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2025	2,724,580
3070	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2025	615,562
3070	FA01	FIRE ALARM SYSTEM - DEVICES		10823253	IDF-1	D4030	2025	522,576
3070	FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS	IDF-1	10823253	IDF-1	D4030	2025	24,131
3070	LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	ORIGINAL BLDG			D5020	2025	1,496,157
3070	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	1996			C1030	2026	11,218
							TOTAL	**$7,375,809**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
4	3070ES01	EIFS RESTORATION	3	$14,911
		TOTAL FOR CORRECTIVE ACTION		**$14,911**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	3070FS01	EXTERIOR STAIR UPGRADES	1	$7,551
2	3070AC02	INTERIOR STAIR UPGRADES	2	$5,819
3	3070AC01	SERVICE COUNTER & DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$20,069
5	3070EL01	ADD EXTERIOR LIGHTING	3	$2,315
		TOTAL FOR PLANT ADAPTION		**$35,754**
		GRAND TOTAL:		**$50,665**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	3070AC02	2	Plant Adaption	INTERIOR STAIR UPGRADES	$5,819
3	3070AC01	3	Plant Adaption	SERVICE COUNTER & DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$20,069
				TOTAL FOR ACCESSIBILITY	**$25,888**
5	3070EL01	3	Plant Adaption	ADD EXTERIOR LIGHTING	$2,315
				TOTAL FOR ELECTRICAL	**$2,315**
4	3070ES01	3	Corrective Action	EIFS RESTORATION	$14,911
				TOTAL FOR EXTERIOR	**$14,911**
1	3070FS01	1	Plant Adaption	EXTERIOR STAIR UPGRADES	$7,551
				TOTAL FOR FIRE/LIFE SAFETY	**$7,551**
				GRAND TOTAL:	**$50,665**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

EXTERIOR STAIR UPGRADES

Project Number:	3070FS01	**Category Code:** FS5E	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	9/26/2018	**Element:**	STAIRS AND RAILING

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Item Only: Floor(s) 2
ADAAG	505		

Description

Current legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the exterior walkway and stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Switchback handrail / guardrail system per floor	FLR	2	$1,653	$3,305	$1,061	$2,122	$5,427
			Base Material/Labor Costs	**$3,305**		**$2,122**	
			Indexed Material/Labor Costs	**$3,285**		**$2,139**	**$5,424**
					Construction Mark Up at 20.0%		**$1,085**
					Original Construction Cost		**$6,509**
Date of Original Estimate: 9/26/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$6,509**
					Professional Fees at 16.0%		**$1,041**
					TOTAL PROJECT COST		**$7,551**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	3070AC02	**Category Code:** AC3B	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/26/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Item Only: Floor(s) 1,2
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail design relative to twelve-inch horizontally requirements at the landings. Future renovation efforts should include addition of these extensions to meet current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	3	$729	$2,188	$663	$1,989	$4,178
Base Material/Labor Costs				**$2,188**		**$1,989**	
Indexed Material/Labor Costs				**$2,175**		**$2,005**	**$4,181**
Construction Mark Up at 20.0%							**$836**
Original Construction Cost							**$5,017**
Date of Original Estimate: 9/26/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,017**
Professional Fees at 16.0%							**$803**
TOTAL PROJECT COST							**$5,819**

All costs shown as Present Value

SERVICE COUNTER & DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	3070AC01	**Category Code:** AC4A	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/26/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602, 804	Not Applicable	Item Only: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the service counter in room 202 and the two single-level drinking fountains are a barrier to accessibility. A wheelchair-accessible section should be incorporated into each noncompliant service counter and the single-level drinking fountains should be replaced with dual-level, refrigerated units that are properly recessed or protected by cane barriers.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	2	$1,549	$3,098	$476	$952	$4,051
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	2	$932	$1,865	$3,321	$6,643	$8,508
ADA-compliant service counter	LF	6	$199	$1,194	$106	$637	$1,830
Base Material/Labor Costs				**$6,157**		**$8,232**	
Indexed Material/Labor Costs				**$6,120**		**$8,298**	**$14,417**
Construction Mark Up at 20.0%							**$2,883**
Original Construction Cost							**$17,301**
Date of Original Estimate: 9/26/2018						**Inflation**	**$0**
Current Year Construction Cost							**$17,301**
Professional Fees at 16.0%							**$2,768**
TOTAL PROJECT COST							**$20,069**

All costs shown as Present Value

EIFS RESTORATION

Project Number:	3070ES01	**Category Code:** ES2B	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	9/26/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) P

Description

University personnel stated that the penthouse on the 1996 portion of the building has significant leakage issues. It is recommended that the cracking surfaces being repaired and sealed to prevent additional issues.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Restore EIFS to include two percent crack repair, surface preparation, and refinishing	SF	1,340	$5.00	$6,700	$3.00	$4,020	$10,720
Base Material/Labor Costs				**$6,700**		**$4,020**	
Indexed Material/Labor Costs				**$6,660**		**$4,052**	**$10,712**
Construction Mark Up at 20.0%							**$2,142**
Original Construction Cost							**$12,854**
Date of Original Estimate: 9/26/2018						**Inflation**	**$0**
Current Year Construction Cost							**$12,854**
Professional Fees at 16.0%							**$2,057**
TOTAL PROJECT COST							**$14,911**

All costs shown as Present Value

ADD EXTERIOR LIGHTING

Project Number:	3070EL01	**Category Code:** EL4A	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	ELECTRICAL
Project Class:	Plant Adaption	**Component:**	DEVICES AND FIXTURES
Date Basis:	10/12/2018	**Element:**	EXTERIOR LIGHTING

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) R

Description

It is recommended that additional exterior lighting be installed on the roof around penthouse entrances in order to illuminate these areas. During the inspection, a deficiency in quantity of light fixtures was observed. Install new exterior lighting systems in order to ensure a safe environment for building users during dark hours of the day. Place all new exterior lighting systems on photocell activation.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install new commercial exterior building-mounted HID floodlight fixture	EA	3	$444	$1,333	$112	$335	$1,668
			Base Material/Labor Costs	**$1,333**		**$335**	
			Indexed Material/Labor Costs	**$1,325**		**$338**	**$1,663**
						Construction Mark Up at 20.0%	**$333**
						Original Construction Cost	**$1,995**
Date of Original Estimate: 10/12/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$1,995**
						Professional Fees at 16.0%	**$319**
						TOTAL PROJECT COST	**$2,315**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EF03	EXTERIOR STAIR TREAD AND LANDING FINISH				2	FLR	$7,871	1996	15	6	DR
EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD				2,352	FLR	$6,600	1996	12	9	DR
EW11	WALL, EXTERIOR, EIFS	1996 ADDITION			1,340	SF	$41,889	1996	40		2036
EW11	WALL, EXTERIOR, EIFS	2005 ADDITION			4,030	SF	$125,981	2004	40		2044
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				900	SF	$18,991	2004	25		2029
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				2,690	SF	$56,761	2013	25		2038
WN04	GLASS, CURTAIN WALL, PREMIUM				12,210	SF	$4,470,188	2013	60		2073
WN05	GLASS, STOREFRONT	2004 INSTALL			920	SF	$115,974	2004	40		2044
WN05	GLASS, STOREFRONT	2013 INSTALL			310	SF	$39,078	2013	40		2053
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	1996 INSTALL			3,850	SF	$622,041	1996	40		2036
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	2004 INSTALL			5,490	SF	$887,015	2004	40		2044
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	2013 INSTALL			1,650	SF	$266,589	2013	40		2053
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PUSH BAR HDW			2	LEAF	$6,044	2013	25		2038
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	1996 DRS, PANIC HDW			2	LEAF	$6,044	1996	25		2021
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	2004 DRS, PANIC HDW			12	LEAF	$36,267	2004	25		2029
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	2013 DRS, PANIC HDW			16	LEAF	$48,356	2013	25		2038

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	1996 DRS, CMMCL HDW			4	LEAF	$8,026	1996	40		2036
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	2004 DRS, CMMCL HDW			3	LEAF	$6,020	2004	40		2044
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			7	EA	$47,392	2013	20		2033
DR28	DOOR OPERATOR, POWER-ASSIST	EXT GLASS DRS			8	EA	$54,162	2013	20		2033
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	1996 HM DRS			4	EA	$3,786	1996	12	9	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	2004 HM DRS			3	EA	$2,839	2004	12	1	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	PUSH BAR			2	EA	$1,893	2013	12		2025
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DOORS			30	EA	$35,611	2013	12		2025
RR05	ROOF - SPRAYED POLY FOAM	SPRAY ROOF			10,712	SF	$102,421	2003	15		2018
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT OLD			20,600	SF	$449,096	1996	20	1	DR
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	MOD BIT BALLASTED			13,390	SF	$242,673	2013	20		2033
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			6,901	SF	$147,393	2013	40		2053
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	MOD BIT OLD			150	LF	$2,863	1996	20	1	DR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	METAL			1,330	LF	$25,389	2013	20		2033
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	SPRAY ROOF			100	LF	$1,909	2003	20		2023
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	MOD BIT OLD			125	SF	$35,772	1996	35		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	MOD BIT BALLASTED			2,750	SF	$786,977	2013	35		2048
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	1996 DRS, CMMCL HDW			33	LEAF	$72,978	1996	60		2056
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	2004 DRS, CMMCL HDW			58	LEAF	$128,264	2004	60		2064
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	2013 DRS, CMMCL HDW			19	LEAF	$42,017	2013	60		2073
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	1996 DRS, CMMCL HDW			18	LEAF	$66,034	1996	60		2056
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	2013 DRS, CMMCL HDW			36	LEAF	$132,067	2013	60		2073
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	2004 DRS, PANIC HDW			22	LEAF	$80,708	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	2013 DRS, PANIC HDW			16	LEAF	$58,697	2013	60		2073
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	1996 NONRATED			33	EA	$24,846	1996	35		2031
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2004 NONRATED			58	EA	$43,668	2004	35		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2013 NONRATED			19	EA	$14,305	2013	35		2048
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	1996 RATED DRS			18	EA	$13,552	1996	35		2031
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2013 RATED DRS			36	EA	$27,104	2013	35		2048
DR26	DOOR PANIC HARDWARE, INTERIOR	2004 RATED DRS			22	EA	$26,113	2004	30		2034
DR26	DOOR PANIC HARDWARE, INTERIOR	2013 RATED DRS			16	EA	$18,991	2013	30		2043
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	2013			50	LF	$28,044	2013	30		2043

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	1996			20	LF	$11,218	1996	30		2026
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP				60,790	SF	$4,698,690	2004	40		2044
IW01	WALL FINISH - APPLIED, STANDARD				976,200	SF	$2,724,580	2013	12		2025
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				36,560	SF	$1,480,739	2013	60		2073
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			RRS T2-3 & T1-6	4,980	SF	$201,698	2004	60		2064
IW08	WALL FINISH - WOOD PANEL, STANDARD			CRDR C2-7	20,770	SF	$433,099	2013	40		2053
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				51,670	SF	$615,562	2013	12		2025
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD			VET TECH LAB 138	1,030	SF	$7,089	2004	20		2024
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			RR MAIN CRDR	3,640	SF	$128,371	2013	40		2053
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			RRS T2-3 & T1-6	500	SF	$17,633	2004	40		2044
IF09	FLOORING - TERRAZZO RESURFACE			MAIN CRDR	4,130	SF	$54,609	2013	50		2063
IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE			RMS 225 & 217B	1,030	SF	$24,154	2004	20		2024
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			LABS	41,340	SF	$144,591	2004	10	3	DR
IF26	INTERIOR STAIR TREAD AND LANDING FINISH				3	FLR	$11,806	2013	15		2028
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	1996 INSTALL			19,380	SF	$215,703	1996	45		2041
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2013 INSTALL			34,880	SF	$388,221	2013	45		2058

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2004 INSTALL			23,250	SF	$258,777	2004	45		2049
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2013 INSTALL			19,380	SF	$54,090	2013	24		2037
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2004 INSTALL			6,460	SF	$18,030	2004	24		2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 2	4380	M1-2	1	EA	$257,984	1996	25		2021
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	DUMBWAITER	2115	122	1	EA	$257,984	1998	25		2023
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	4419	M1-5	1	EA	$257,984	2004	25		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2004 INSTALL			4	EA	$5,405	2004	35		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2013 INSTALL			24	EA	$32,428	2013	35		2048
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2004 INSTALL			2	EA	$1,545	2004	20		2024
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2013 INSTALL			3	EA	$2,318	2013	20		2033
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	2004 INSTALL			2	EA	$3,329	2004	50		2054
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	2013 INSTALL			1	EA	$1,664	2013	50		2063
FX10	PLUMBING FIXTURE - URINAL	2004 INSTALL			1	EA	$1,079	2004	35		2039
FX10	PLUMBING FIXTURE - URINAL	2013 INSTALL			6	EA	$6,472	2013	35		2048
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	2004 INSTALL			3	EA	$5,085	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	2013 INSTALL			25	EA	$42,374	2013	35		2048

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH				3	EA	$3,240	1996	35		2031
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH				14	EA	$21,541	1996	35		2031
BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP		301	1	EA	$805	2004	20		2024
BF01	BACKFLOW PREVENTER (<=1 INCH)	AUTOCLAVE BFP	2308	122	1	EA	$503	1996	20	1	DR
BF03	BACKFLOW PREVENTER (2-3 INCHES)	MAIN DW BFP	9479	J1-3	1	EA	$7,331	2016	20		2036
BF05	BACKFLOW PREVENTER (4-6 INCHES)	FIRE BFP	9480	J1-3	1	EA	$12,272	1996	20	12	2028
PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET				121,585	SF	$1,966,585	1996	50		2046
TK04	WATER TANK (275-1,649 GAL)	HWST FOR BL1	2233	301	300	GAL	$15,696	1996	30	2	2028
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	BL1	2311	301	225	MBH	$18,620	2004	25		2029
WH10	WATER HEATER - RESIDENTIAL, GAS (>55 GAL)	DWH1	4968	J2-1	80	GAL	$3,026	2013	20		2033
WH10	WATER HEATER - RESIDENTIAL, GAS (>55 GAL)	DWH2	9136	101	120	GAL	$4,538	2013	20		2033
PD09	DRAIN PIPING SYSTEM - LABORATORY, WET				121,585	SF	$2,948,193	1996	60		2056
PG06	VACUUM PUMP - ROTARY VANE (>2<=4 HP)	VP-1	2168 / 2169	M2-3	3	HP	$16,515	2004	20		2024
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UAC1	2217	PTHS 2	3	HP	$6,847	2004	25		2029
BL27	BOILER - GAS (1500-2400 MBH)	B-1	2235	301	1,600	MBH	$60,067	1996	28		2024
BL27	BOILER - GAS (1500-2400 MBH)	B-2	2237	301	1,600	MBH	$60,067	1996	28		2024

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BL27	BOILER - GAS (1500-2400 MBH)	B-3	2239	301	1,720	MBH	$64,572	2004	28		2032
CH02	CHILLER - WATER-COOLED CENTRIFUGAL OR SCREW (150-350 TONS)	CHILLER 302	9077	ROOF	200	TON	$292,116	2015	30		2045
CH02	CHILLER - WATER-COOLED CENTRIFUGAL OR SCREW (150-350 TONS)	CH3	2280	ROOF	170	TON	$248,299	2004	30		2034
CH15	CHILLER - SPLIT RECIPROCATING OR SCROLL (75-150 TONS)	CHILLER 301	9076	ROOF	100	TON	$127,529	2015	30		2045
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DDXS1, N WING	6699, 4939, 4950	ROOF	6	TON	$23,256	2012	20		2032
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	DDXS2, S WING	4966, 4917, 4945	ROOF	6	TON	$19,380	2012	20		2032
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU-3	2189	E1-1	1	HP	$4,441	2004	35		2039
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU-2	2163	M2-3	1	HP	$4,441	1996	35		2031
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU-1	2162	M2-3	1	HP	$4,441	1996	35		2031
AH07	AIR HANDLING UNIT - INDOOR (9-12 HP)	HRU-101	4940	M1-1	10	HP	$76,848	2013	35		2048
AH07	AIR HANDLING UNIT - INDOOR (9-12 HP)	HRU-102	4951	M1-3	10	HP	$76,848	2013	35		2048
AH10	AIR HANDLING UNIT - INDOOR (23-27 HP)	AHU4	2159	M2-3	25	HP	$136,055	2004	35		2039
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU2	2205	PTHS 1	40	HP	$221,108	1996	35		2031
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU3	2222	PTHS 2	40	HP	$221,108	2004	35		2039
AH14	AIR HANDLING UNIT - INDOOR (63-88 HP)	AHU1	2210	PTHS 2	75	HP	$307,164	1996	35		2031
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	2204	ROOF	1	EA	$6,899	1996	25	8	2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-304	6679	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-303	6680	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-302	6681	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-301	6682	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-305	6683	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-306	6684	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-307	6685	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-308	6686	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-309	6687	ROOF	1	EA	$1,265	2013	25		2038
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	TV-310	6688	ROOF	1	EA	$1,265	2013	25		2038
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU2 RF	2206	PTHS 1	15	HP	$19,813	1996	35		2031
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU1 RF	2211	PTHS 2	25	HP	$33,021	1996	35		2031
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU3 RF	2212	PTHS 2	5	HP	$6,604	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	AHU4 RF	2157	M2-3	8	HP	$10,567	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF1	2271	PTHS 2	1	HP	$925	1996	35		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRU-102 RF	2206	M1-3	8	HP	$8,453	2013	35		2048
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF45	2275	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF46	2274	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF47	2273	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF48	6631	PTHS 2	2	HP	$1,585	2012	35		2047
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF49	6630	PTHS 2	2	HP	$1,585	2012	35		2047
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRU-101 RF	2206	M1-1	8	HP	$8,453	2013	35		2048
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF32	2255	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF33	2256	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF41	4957	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF42	4958	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF43	2277	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF44	2276	PTHS 2	2	HP	$1,585	2004	35		2039
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF24	2259	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF26	2257	PTHS 2	1	HP	$925	1996	35		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF27	2251	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF28	2252	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF29	2253	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF31	2254	PTHS 2	2	HP	$1,849	2006	35		2041
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF19	2264	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF2	2272	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF20	2263	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF21	2262	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF22	2261	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF23	2260	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF11	2270	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF14	2269	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF15	2268	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF16	2267	PTHS 2	1	HP	$925	1996	35		2031
FN21 FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF17	2266	PTHS 2	1	HP	$925	1996	35		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LEF18	2265	PTHS 2	1	HP	$925	1996	35		2031
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF1	2312	301	1	HP	$1,363	2004	20	4	2028
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF4	2313	301	1	HP	$1,363	2004	20	4	2028
FN35	FAN - UTILITY SET, 1/4" SP (12-17 HP)	GEF-1	4967	PTHS 2	15	HP	$23,457	2004	40		2044
HD01	HOOD, FUME	FEH	2134, 2135, 2137	225	18	LF	$43,924	2004	35		2039
HD01	HOOD, FUME	FEH	2139, 2140, 2141	223	18	LF	$43,924	1996	35		2031
HD01	HOOD, FUME	FEH	2144, 2145	221	18	LF	$43,924	1996	35		2031
HD01	HOOD, FUME	FEH	2165	232	6	LF	$14,641	1996	35		2031
HD01	HOOD, FUME	FEH	2151	234	6	LF	$14,641	1996	35		2031
HD01	HOOD, FUME	FEH	2104	123	6	LF	$17,570	1996	35		2031
HD01	HOOD, FUME	FEH	2191	217	6	LF	$14,641	1996	35		2031
HD01	HOOD, FUME	FEH	2122, 2123	134	12	LF	$29,283	1996	35		2031
HD01	HOOD, FUME	FEH	2126	132	6	LF	$14,641	1996	35		2031
HD01	HOOD, FUME	FEH	2109, 2110	121	12	LF	$29,283	1996	35		2031
HD01	HOOD, FUME	FEH	2100, 2103	125	12	LF	$29,283	2004	35		2039
HD01	HOOD, FUME	FEH	2113	122	6	LF	$14,641	1996	35		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL BLDG		ORIG BLDG	104,085	SF	$8,878,794	1996	45		2041
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	FRONT ADDITION		FRONT ADDITION	17,500	SF	$1,492,808	2013	45		2058
HX06	HEAT EXCHANGER - PLATE FRAME (<=200 GPM)	HX-301 HTG	4964	PTHS 2	48	GPM	$6,849	2013	30		2043
HX06	HEAT EXCHANGER - PLATE FRAME (<=200 GPM)	HX-302 CHW	4965	PTHS 2	48	GPM	$6,849	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-5	2246	301	2	HP	$3,385	2009	30		2039
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-3	2236	301	1	HP	$1,693	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	2243	301	10	HP	$16,926	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	2244	301	10	HP	$16,926	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4		301	1	HP	$1,693	2012	30		2042
PH01	PUMP - ELECTRIC (<=10 HP)	DWPS	2230, 2232	301	1	HP	$1,693	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-6	2221	PTHS 2	2	HP	$3,385	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-3	2225	PTHS 2	10	HP	$16,926	2015	30		2045
PH01	PUMP - ELECTRIC (<=10 HP)	P-301	4963	PTHS 2	2	HP	$3,385	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	P-302	4962	PTHS 2	2	HP	$3,385	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-7	2158	M2-3	1	HP	$1,693	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	GRUNDFOS PUMPS	VARIOUS	J2-1, M2-1,2,3	23	HP	$15,572	2004	30		2034

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH02	PUMP - ELECTRIC (10 - 15 HP)	CHP-301	9078	PTHS 2	15	HP	$22,406	2015	35		2050
PH02	PUMP - ELECTRIC (10 - 15 HP)	CHP-302	9079	PTHS 2	15	HP	$22,406	2015	35		2050
TK29	EXPANSION TANK, DIAPHRAGM (25-44 GAL)	ET2	2240	301	30	GAL	$5,956	2004	15	9	2028
TK32	EXPANSION TANK, DIAPHRAGM (100-249 GAL)	ET1	2234	301	132	GAL	$10,191	2004	25		2029
TK32	EXPANSION TANK, DIAPHRAGM (100-249 GAL)	ET-301		PTHS 2	132	GAL	$10,191	2013	25		2038
BA09	HVAC CONTROLS - TERMINAL ASSEMBLIES - LABORATORY, WET				121,585	SF	$1,140,197	2013	20		2033
BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				121,585	SF	$325,054	2013	10		2023
BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				121,585	SF	$148,653	2013	10		2023
FS01	FIRE SPRINKLER SYSTEM - WET				121,585	SF	$1,644,880	1996	80		2076
FA01	FIRE ALARM SYSTEM - DEVICES		10823253	IDF-1	121,585	SF	$522,576	2007	18		2025
FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS	IDF-1	10823253	IDF-1	1	EA	$24,131	2007	18		2025
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC1	2209	PTHS 2	7	EA	$533,520	1996	25	7	2028
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL BLDG			104,085	SF	$2,908,068	1996	50		2046
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	FRONT ADDITION			17,500	SF	$488,939	2013	50		2063
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDP	2183	E1-1	1,200	AMP	$89,981	2004	40		2044
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDH	2185	E1-1	1,600	AMP	$129,616	2012	40		2052

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	BLDG SVC	2182	E1-1	2,000	AMP	$168,411	2012	40		2052
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU3 RF	2223	PTHS 2	5	HP	$3,633	1996	15	6	DR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-301	4961	PTHS 2	2	HP	$1,453	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-302	4960	PTHS 2	2	HP	$1,453	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-1	2241	301	10	HP	$5,554	2004	15		2019
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-2	2242	301	10	HP	$5,554	2004	15		2019
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU4 RF	2160	M2-3	8	HP	$4,443	2004	15		2019
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HRU-101 SF	4941	M1-1	10	HP	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HRU-102 SF	4953	M1-3	10	HP	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HRU-101 RF	4942	M1-1	8	HP	$4,443	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HRU-102 RF	4952	M1-3	8	HP	$4,443	2013	15		2028
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU2 RF	9138	PTHS 1	15	HP	$6,433	2012	16		2028
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	GEF1	2219	PTHS 2	15	HP	$6,433	2004	16		2020
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CHILLER 301	9080	PTHS 2	15	HP	$6,433	2016	16		2032
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CHILLER 302	9081	PTHS 2	15	HP	$6,433	2016	16		2032
VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU1 RF	2213	PTHS 2	25	HP	$9,375	2012	17		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU4 SF	2161	M2-3	25	HP	$9,375	2004	17		2021
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU3 SF	2220	PTHS 2	40	HP	$12,316	1996	18	3	DR
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU2 SF	9137	PTHS 1	40	HP	$12,316	2012	18		2030
VF10	VARIABLE FREQUENCY DRIVE (50-75 HP)	AHU1 SF	4959	PTHS 2	75	HP	$19,530	2012	20		2032
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)			PERIMETER & ENTRANCES	10	EA	$5,086	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			PERIMETER & ENTRANCES	6	EA	$8,333	1996	20	1	DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			ROOF	3	EA	$2,315	2015	20		2035
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	ORIGINAL BLDG			104,085	SF	$1,496,157	2005	20		2025
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	FRONT ADDITION			17,500	SF	$206,190	2013	20		2033
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATSLS7	9121	E1-1	100	AMP	$5,527	2012	25		2037
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATSOS7	4946	BDF	150	AMP	$5,956	2012	25		2037
						Grand Total:	**$49,830,138**				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B1010	EXTERIOR STAIR TREAD AND LANDING FINISH		2	FLR	$7,871	DR
B2010	EXTERIOR SURFACE FINISH - APPLIED, STANDARD		2,352	FLR	$6,600	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	1996 HM DRS	4	EA	$3,786	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	2004 HM DRS	3	EA	$2,839	DR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT OLD	20,600	SF	$449,096	DR
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	MOD BIT OLD	150	LF	$2,863	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		41,340	SF	$144,591	DR
D2020	BACKFLOW PREVENTER (<=1 INCH)	AUTOCLAVE BFP	1	EA	$503	DR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU3 RF	5	HP	$3,633	DR
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU3 SF	40	HP	$12,316	DR
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)		6	EA	$8,333	DR
				TOTAL DEFERRED RENEWAL COST	$642,432	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - SPRAYED POLY FOAM	SPRAY ROOF	10,712	SF	$102,421	2018
2018		PROJECTED COMPONENT REPLACEMENT COST			$102,421	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2019

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-1	10	HP	$5,720	2019
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-2	10	HP	$5,720	2019
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU4 RF	8	HP	$4,576	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$16,017**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	GEF1	15	HP	$6,825	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$6,825**	

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (20-25 HP)	AHU4 SF	25	HP	$10,244	2021
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	1996 DRS, PANIC HDW	2	LEAF	$6,605	2021
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 2	1	EA	$281,906	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$298,754**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 3070 for 2022

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	SPRAY ROOF	100	LF	$2,213	2023
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	DUMBWAITER	1	EA	$299,074	2023
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY		121,585	SF	$172,330	2023
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY		121,585	SF	$376,827	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$850,444	

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	2004 INSTALL	2	EA	$1,845	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	DW BFP	1	EA	$961	2024
D2090	VACUUM PUMP - ROTARY VANE (>2<=4 HP)	VP-1	3	HP	$19,720	2024
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		1,030	SF	$8,464	2024
C3020	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE		1,030	SF	$28,841	2024
D3020	BOILER - GAS (1500-2400 MBH)	B-1	1,600	MBH	$71,724	2024
D3020	BOILER - GAS (1500-2400 MBH)	B-2	1,600	MBH	$71,724	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$203,278	

COMPONENT RENEWAL COST BY YEAR

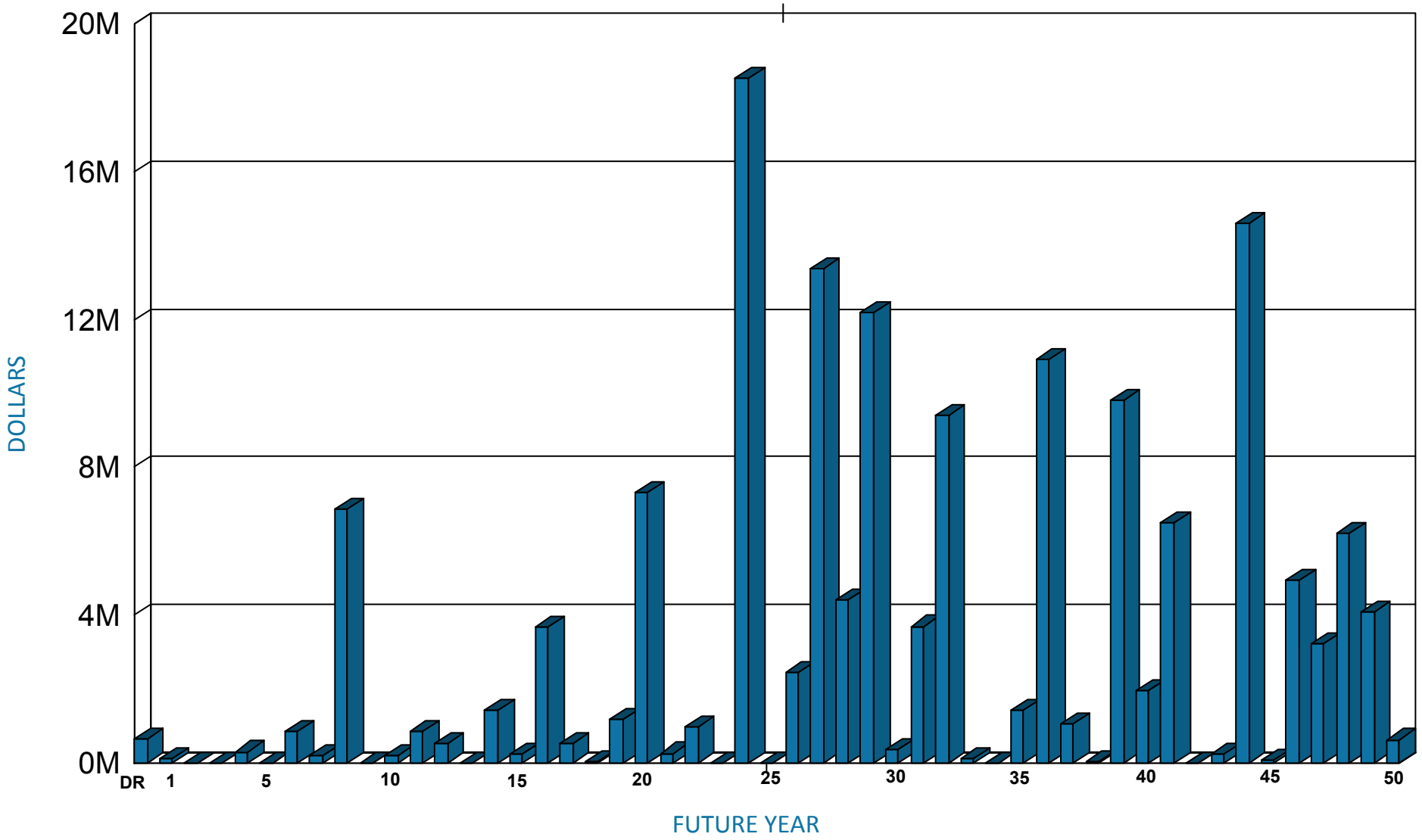
All costs shown as Future Value using a 3% average inflation rate

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	ORIGINAL BLDG	104,085	SF	$1,840,085	2025
D4030	FIRE ALARM SYSTEM - DEVICES		121,585	SF	$642,703	2025
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		51,670	SF	$757,064	2025
C3010	WALL FINISH - APPLIED, STANDARD		976,200	SF	$3,350,890	2025
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS	IDF-1	1	EA	$29,679	2025
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	PUSH BAR	2	EA	$2,328	2025
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DOORS	30	EA	$43,797	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$6,666,544**	

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	1996	20	LF	$14,210	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$14,210**	

No Projected Component Replacement Cost for Asset No. 3070 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



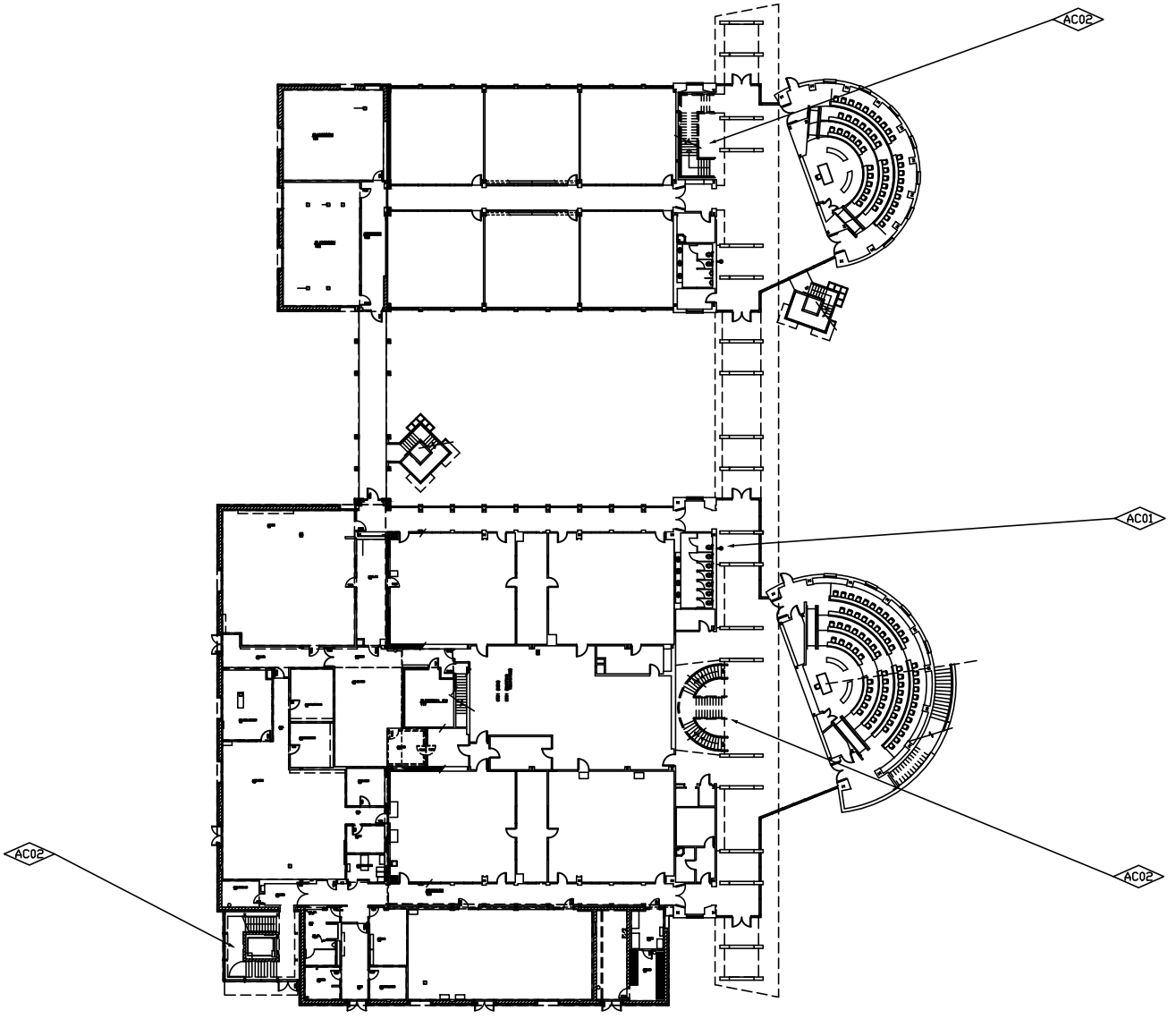
Average Annual Renewal Cost per SF $10.55

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



BUILDING
7

BLDG NO. 3070

BES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/2/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 2

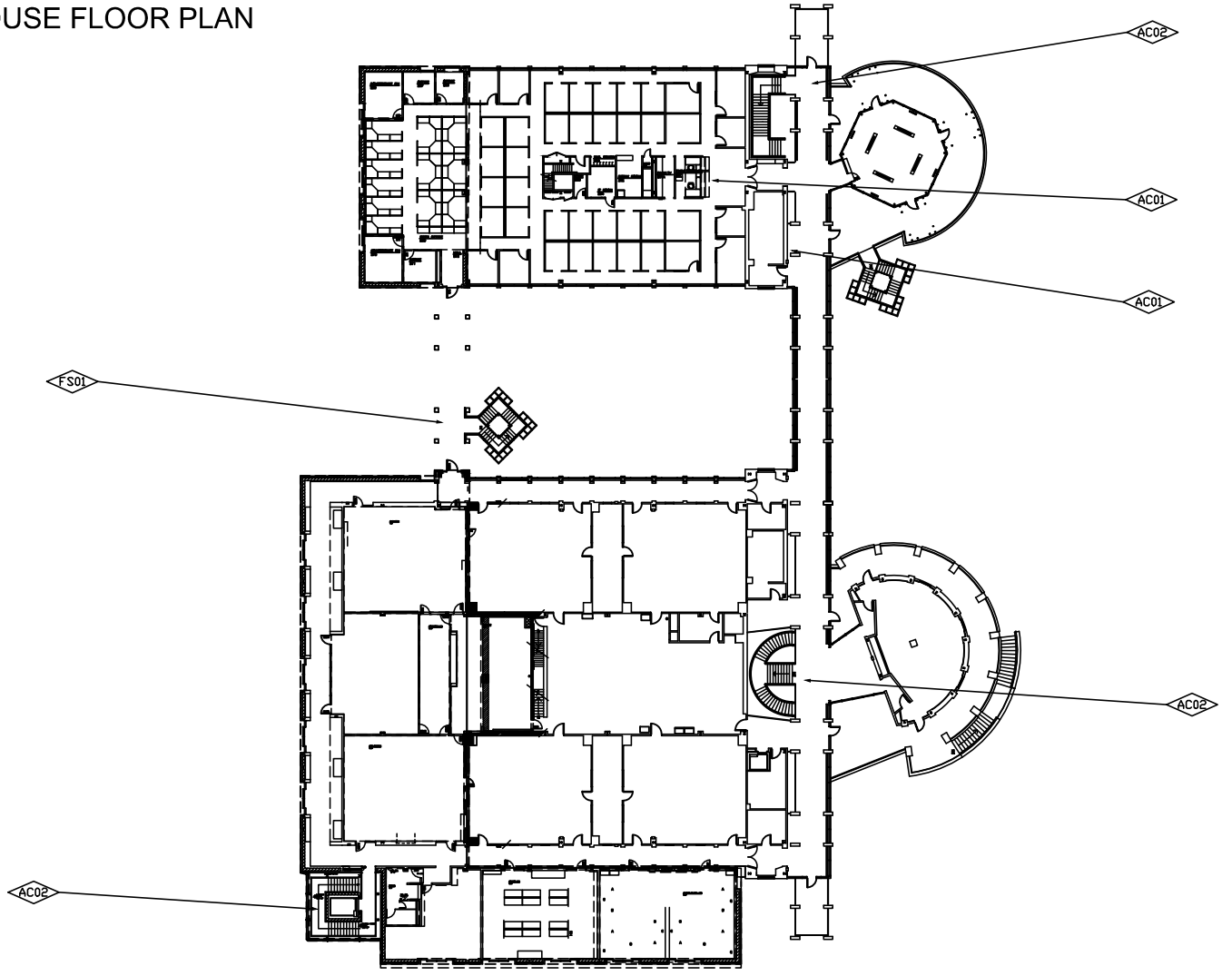
PORTLAND COMMUNITY COLLEGE

ROOF

EL01

PENTHOUSE FLOOR PLAN

ES01



BUILDING
7

BLDG NO. 3070

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date:	11/2/2018
Drawn by:	A.W.
Project No.	18-064

SECOND FLOOR PLAN

Sheet No.

2 of 2

SECTION 6

PHOTOGRAPHS

3070001a 8/28/2018
Modified-bitumen roof and EIFS on penthouse
Roof

3070001e 8/28/2018
One of two, original, variable-volume, single-zone, four-pipe AHUs
Penthouse one

3070002a 8/28/2018
Deteriorated EIFS siding
Penthouse

3070002e 8/28/2018
One of two VRV ductless DX systems
Roof

3070003a 8/28/2018
Concrete floor and unfinished walls
Penthouse

3070003e 8/28/2018
Centrifugal exhaust fan for general exhaust
Roof

3070004a 8/28/2018
Aluminum and glass skylight
Roof

3070004e 8/28/2018
Exterior illumination needed above door exit
Penthouse one roof entrance

3070005a 8/28/2018
Ballasted roof and aluminum and glass skylight
Roof

3070005e 8/28/2018
Free-wheeled turbine ventilator for building addition cooling
Roof

3070006a 8/28/2018
Sprayed roof coating and standing seam metal
Roof

3070006e 8/28/2018
Typical residential, electric domestic water heater
Second floor, custodial J2-1

3070007a 8/28/2018
Aged sprayed roof coating
Roof

3070007e 8/28/2018
Elevator #2 cab that has not been modernized
Elevator #2

3070008a 8/28/2018
Aged sprayed roof coating
Roof

3070008e 8/28/2018
Two-floor, nonpassenger, 100 pound capacity dumbwaiter
Second floor, south wing

3070009a 8/28/2018
EIFS on penthouse
Roof

3070009e 8/28/2018
Gas-fired domestic hot water boiler and storage tank
Second floor, boiler room

3070010a 8/28/2018
Concrete floor, painted walls, and lay-in acoustical tile
Room 225

3070010e 8/28/2018
Two original and one updated, gas-fired heating hot water boilers
Second floor, boiler room

3070011a 8/28/2018
Ceramic tile finishes and wall-mounted lavatories
Restroom T2-2

3070011e 8/28/2018
Main heating hot water pumps
Second floor, boiler room

3070012a 8/28/2018
Ceramic tile finishes and wall-mounted urinals
Restroom T2-2

3070012e 8/28/2018
One of two small domestic water backflow preventer valves
Second floor, boiler room

3070013a 8/28/2018
Ceramic tile finishes and wall-mounted water closet
Restroom T2-2

3070013e 8/28/2018
Updated inline centrifugal fans for fume hoods
Penthouse two

3070014a 8/28/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 231

3070014e 8/28/2018
Original and updated VFD for HVAC equipment
Penthouse two

3070015a 8/28/2018
Ceramic tile finishes and wall-mounted lavatories
Restroom T2-3

3070015e 8/28/2018
Motor control center for fume exhaust fans
Penthouse two

3070016a 8/28/2018
Ceramic tile finishes and wall-mounted water closet
Restroom T2-3

3070016e 8/28/2018
Original inline centrifugal fans for fume hoods
Penthouse two

3070017a 8/28/2018
Noncompliant railings
Stair S2-4

3070017e 8/28/2018
Plate-frame heat exchangers for an alternate low loading means of cooling and heating
Penthouse two

3070018a 8/28/2018
Ceramic tile floor, wood paneling, and painted surfaces
Corridor C2-7

3070018e 8/28/2018
One of two recently installed air-cooled chillers
Roof

3070019a 8/28/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 227

3070019e 8/28/2018
Typical fume hood updated in 2004
Second floor, room 225

3070020a 8/28/2018
Concrete floor, painted walls, and lay-in acoustical tile
Room 227A

3070020e 8/28/2018
Typical emergency shower/eyewash combination station
Second floor, room 225

3070021a 8/28/2018
Exterior concrete and metal walk
Courtyard

3070021e 8/28/2018
Typical emergency eyewash station
Second floor, room 223

3070022a 8/28/2018
Sheet vinyl, painted walls, and casework with kitchen sink
Room 202T

3070022e 8/28/2018
Typical lab-grade plastic drain piping
Second floor, room 221

3070023a 8/28/2018
Noncompliant service counter
Room 202

3070023e 8/28/2018
Fire alarm control system
First floor, room IDF-1

3070024a 8/28/2018
Terrazzo floor and painted surfaces
Corridor C2-2

3070024e 8/28/2018
Multiple small heating hot water distribution pumps
Second floor, M2-2

3070025a 8/28/2018

Nonaccessible drinking fountain

Corridor C2-2

3070025e 8/28/2018

Honeywell DDC system components

Second floor, M2-2

3070026a 8/28/2018

Carpeted floor and painted surfaces

Room 215

3070026e 8/28/2018

Cast-iron drain piping

Second floor, M2-2

3070027a 8/28/2018

Concrete floor, painted walls, laboratory casework, and lay-in acoustical tile

Room 132

3070027e 8/28/2018

Lay-in T8 open cell light fixture

Throughout

3070028a 8/28/2018
Vinyl sheet floor and painted surfaces
Room 138A

3070028e 8/28/2018
One of two variable-volume, four-pipe AHUs installed in 2004
Second floor, M2-2

3070029a 8/28/2018
Concrete floors, painted walls, laboratory casework, and lay-in acoustical tile
Room 122

3070029e 8/28/2018
Vacuum pump for lab use
Second floor, M2-2

3070030a 8/28/2018
Terrazzo floor and painted surfaces
Corridor C1-5

3070030e 8/28/2018
Typical ductless DX evaporator unit
Second floor, IDF-2

3070031a 8/28/2018
Carpeted floor, painted walls, and lay-in metal tile
Room 115

3070031e 8/28/2018
Typical secondary electrical equipment for building addition
First floor, room E2-1

3070032a 8/28/2018
Brick, EIFS, and glazing
North elevation

3070032e 8/28/2018
Typical automated upper level window for building cooling in evening hours
Second floor, addition

3070033a 8/28/2018
Brick and glazing
Northwest corner

3070033e 8/28/2018
One of two heating recover units with chilled water coils
First floor, room M1-1

3070034a 8/28/2018

Exterior catwalk

West elevation

3070034e 8/28/2018

Original fire suppression backflow preventer casing with updated internal components

First floor, room J1-3

3070035a 8/28/2018

Brick and glazing

Southwest corner

3070035e 8/28/2018

Typical surface-mounted T8 light fixtures

Corridors

3070036a 8/28/2018

Brick and glazing

Southeast corner

3070036e 8/28/2018

Hydraulic controller and reservoir for hydraulic elevator

First floor, room M1-5

3070037a 8/28/2018

Exterior finishes

East elevation

3070037e 8/28/2018

Main electrical switchgear

First floor, room E1-1

3070038e 8/28/2018

One of three, suspended, two-pipe cooling FCUs

First floor, room E1-1

3070039e 8/28/2018

Ceiling-mounted, original HID fixtures

Building connector path

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3070
Asset Name	Building 7
Year Built or Last Energy Renovation	1996

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

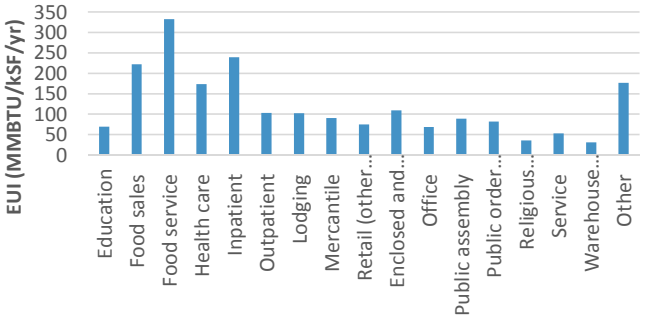
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Laboratory
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**176.7**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 123.7
Energy Efficient (consumes 10% to 30% less energy)	123.7 <= EUI <= 159
Similar (consumes within 10% less or 10% more energy)	159 < EUI < 194.4
Energy Inefficient (consumes 10% to 30% more energy)	194.4 <= EUI <= 229.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 229.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

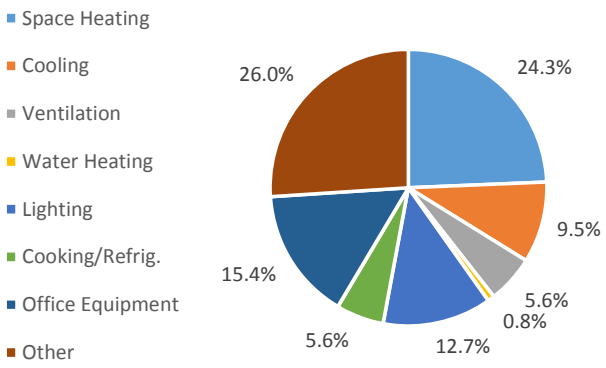


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LABORATORY	
Space Heating	24.3%
Cooling	9.5%
Ventilation	5.6%
Water Heating	0.8%
Lighting	12.7%
Cooking/Refrig.	5.6%
Office Equipment	15.4%
Other	26.0%
Total	100.0%

Figure 2. Energy End Use Profile: Laboratory



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Central Heating	INSTALL AN ENERGY-EFFICIENT BOILER. Energy-efficient boilers and condensing boilers achieve higher efficiencies than conventional boilers. Research FEMP designated commercial boilers to find the most energy-efficient options.	CAP
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Building 9
Asset 3090

Inspected August 29, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

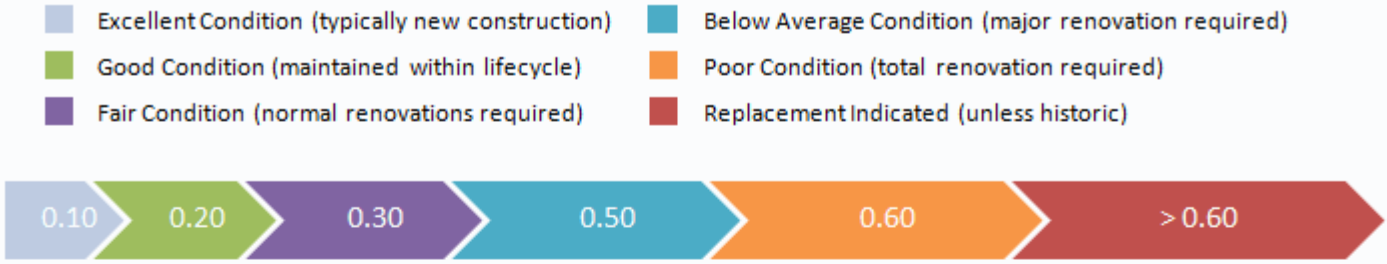
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

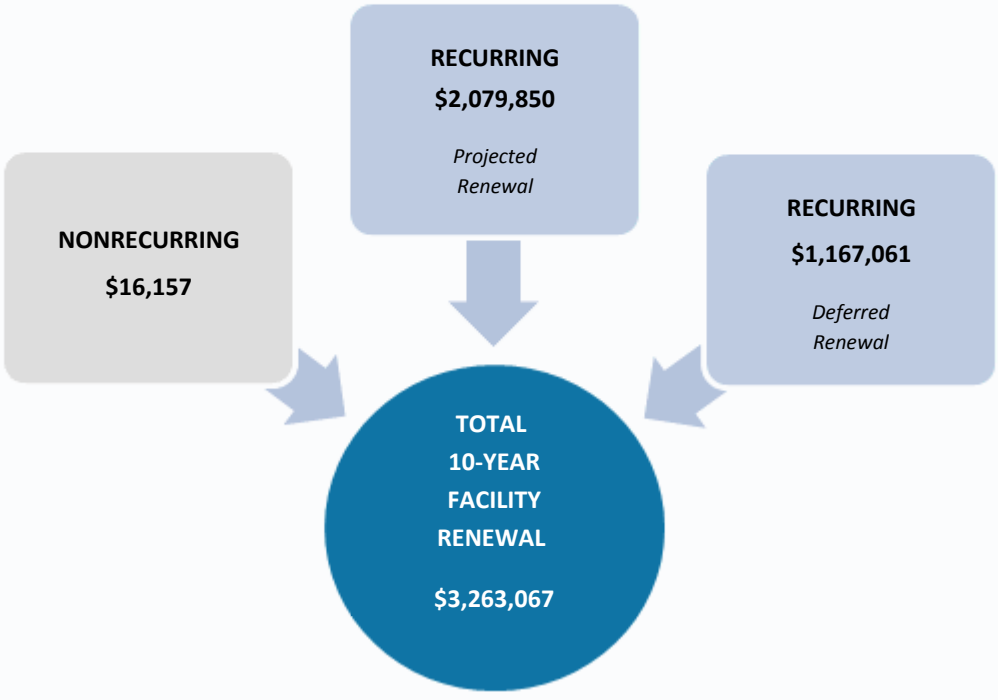
ASSET CODE	3090	**CURRENT REPLACEMENT VALUE**	$26,875,000
ASSET NAME	BUILDING 9	**FACILITY CONDITION NEEDS INDEX**	0.12
ASSET USE	Library	**FACILITY CONDITION INDEX**	0.04
YEAR BUILT	2004	**10-YEAR $/SF**	45.32
GSF	72,000		
INSPECTION DATE	08/29/2018		

FCNI Scale

The FCNI for this asset is **0.12**



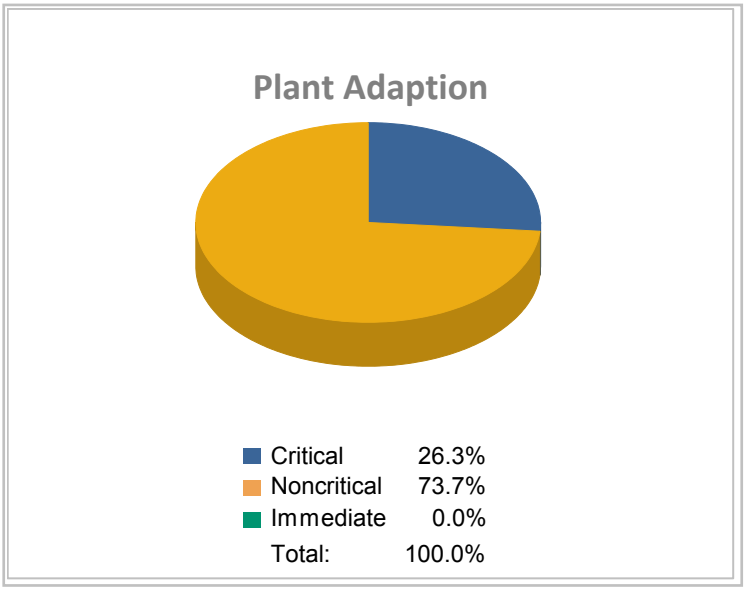
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

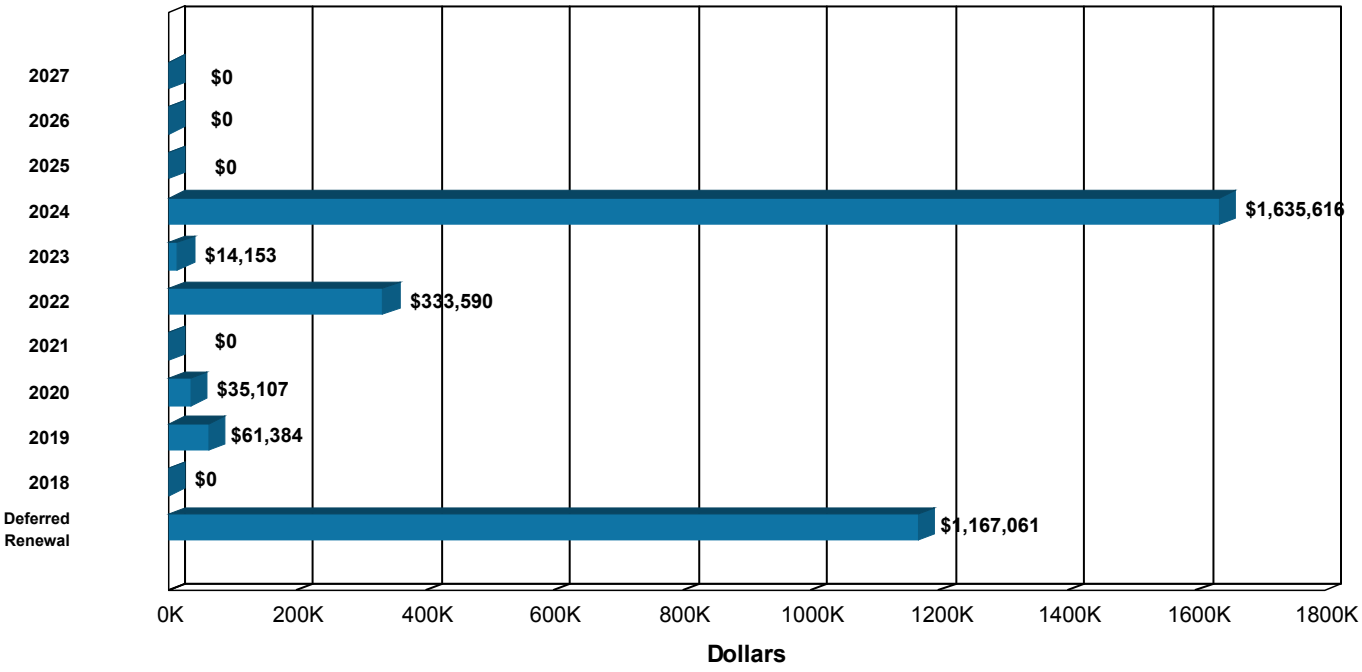
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$4,256**
3 - Noncritical	**$11,901**



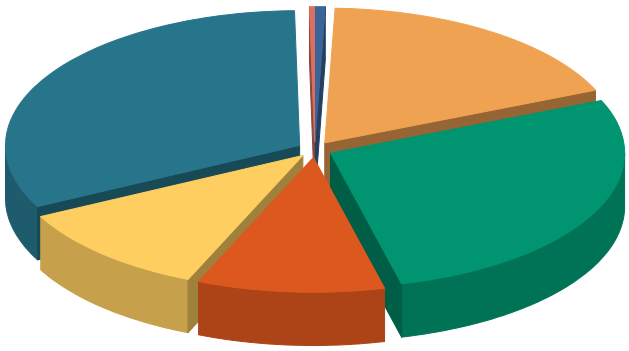
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$16,157	0%
Electrical	$595,024	18%
Exterior	$894,853	27%
Fire/Life Safety	$333,590	10%
Health	$0	0%
HVAC	$358,450	11%
Interiors	$1,052,258	32%
Plumbing	$12,735	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$3,263,067**	

ASSET SUMMARY

Building 9 is a two-story library on the Portland Community College, Rock Creek campus. Constructed in 2004, this library has mixture of offices, reading areas, stack spaces, and assembly areas. The upper floor has a high bay central study room, with a large clerestory light monitor. Additionally, there are staff work areas and individual offices. The first floor contains the main entry lobby, more offices, and workspaces. A portion of this floor is also used for special event functions including a large banquet room supported by a small warming kitchen. Collectively, both floors total approximately 72,000 gross square feet.

Information for this report was gathered during an on-site visit conducted on August 29, 2018.

Site

The grounds around this building are well planted and the concrete walkways and entry plazas are in good condition and well maintained. No landscaping or hardscape upgrades are recommended at this time.

Exterior Structure

The upper main, built-up roof has a cap sheet and integral perimeter trough drains. It is in satisfactory overall condition but should be scheduled for replacement in the latter half of the next ten years. The smaller, lower level, built-up tar and gravel roof appears to be adequate at this time. The brick veneer facades, metal panels, and fixed thermal-pane, metal-framed glazing, storefront, and clerestory light monitor glass are in good overall condition. There is a limited amount of stained cedar wood in the eaves around the building. These surfaces are beginning to show signs of aging and it is recommended that a new coat of sealant be applied to improve their appearance and prevent future degradation. The main glass entry doors are in good working order as are the secondary hollow-metal service doors. Only the exterior door hardware is recommended for near-term replacement.

Interior Finishes/Systems

Most of the interior spaces have a carpet tile floor finish. Approximately 30 percent of the carpeting was replaced in either 2015 or 2016 and is still in fairly good condition. Based on standard wear and age, replace timeworn, stained, or damaged carpet with new commercial-grade finishes in areas with the older finishes. Slate flooring in the main entry lobby and ceramic tile in the restrooms is still in good condition. A few of the support areas have sheet vinyl flooring while the mechanical spaces and stair towers have sealed concrete finishes. The concrete should be scheduled for near-term upgrade and the sheet vinyl will require replacement in the next two to three years.

There are painted walls throughout the facility. These finishes are in good condition but will require an almost continuous program of repainting to maintain an acceptable interior appearance. Cyclical painting should be considered as a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use. Budgetary considerations are taken into account for the next ten years for interior repairs and maintenance. Minor repairs should be completed before work begins. There is also ceramic tile in the restrooms that appears to be in good overall condition with no upgrades required during the timeframe of this assessment.

Ceilings are a mix of suspended tile and painted finishes. These finishes are mostly in good condition and isolated concerns throughout the building should be addressed under routine maintenance. Casework and related countertops are generally in good condition showing signs of normal use. Interior flush wood and metal clad interior doors appear to have appropriate fire ratings. The interior door systems and casework are typically suitable for ten or more additional years of service with normal maintenance.

Accessibility

The building is accessible at grade and a compliant elevator allows access to the upper level. Once inside the building, the interior common spaces and restrooms have been upgraded with accessible features and clearances. However, the drinking fountains are not properly recessed or protected by cane barriers. To ensure a barrier free environment, it is recommended that they be properly recessed or protected by cane barriers.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades for stair one and the addition of extensions to the railings on the main stair number two meet the twelve-inch horizontal requirement.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The Silent Knight addressable fire alarm control panel is on level 1 in room BDF. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on normal life expectancy and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also fully protected by an automated wet-pipe fire suppression system with glass bulb type sprinkler heads. The system includes a fire pump controller, fire pump, and jockey pump. This relatively long-lived system appears to be in adequate condition and is anticipated to provide reliable service beyond the scope of this report, given normal testing, inspection, and maintenance is completed as required per NFPA 25.

HVAC

The primary sources of heating, cooling, and ventilation are provided by a blend of air handling units (AHUs), ductless DX split systems, ductwork, and a digital control system manufactured by Honeywell. Chilled water is provided by two exterior, air-cooled, scroll-type chillers updated in 2014. Three gas-fired boilers generate heating hot water for building heat. Several media pumps distribute the thermal media to AHUs and overhead mounted VAV reheat units. Although the digital controls system is presumably adequate in capacity and capability, the lifecycle expectancy for a control system is approximately 20 years to account for technological upgrades and obsolescence. A new system should enhance facility maintenance and energy efficiency and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set-points where not already employed.

The bulk of facility conditioned tempered air is provided by three, variable volume, single-zone, four-pipe AHUs. The units appear to be in good working order and adequately sized. Ductless DX units (both constant and variable refrigerant volume) address more specific HVAC needs. No modernization efforts are anticipated over the reporting period. A rooftop centrifugal fan and multiple inline exhaust fans address general supply and exhaust requirements such as restrooms, mechanical, and electrical spaces. All of the observed fans are in working order and should continue to provide adequate service over the next ten years.

Electrical

Campus electrical infrastructure provides electrical power to a 277/480 volt switchboard in the main electrical room. The Siemens switchgear has a rated capacity of 1,600 amps and supplies power throughout the facility. The secondary electrical distribution network supplies both 277/480 and 120/208 volt power throughout the building. Secondary Siemens panelboards receive the power for distribution through a couple of step-down transformers where 120/208 volt power is required. Circuits are then energized for mechanical, lighting, and general purpose loads. The electrical distribution network is currently in good condition and should outlast the scope of this report.

The majority of interior lighting consists of T8 open-cell parabolic and recessed CFL light fixtures. Building-mounted and recessed non-LED lighting illuminate the entrances. Although the inspection was performed during daylight, the current lighting scheme seems to address the majority of sensible lighting opportunities. Based on typical lifecycle expectations, obsolescence, and the wide availability of LED lighting technology, replacement of all non-LED lighting is recommended. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve the AHUs and media pumps. Installed between 2004 and 2014, the majority of drives will reach the end of their statistical life expectancy within the reporting window. Replacement is recommended to avoid potential parts obsolescence and operational concerns that result from an undesired failure. This planned approach will likely provide additional energy savings, promote equipment lifecycles, and deliver advanced technological capabilities afforded by devices that are more modern.

Emergency electrical service for this building and Buildings 9, 7, and 3 are provided by a 350 kW diesel-fired generator on the west side of the building. Power is provided through two automatic transfer switches to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed by insulated rigid copper piping. Sanitary waste, vent, and stormwater piping is cast-iron and plastic. Both the supply and drain piping networks should continue to provide adequate service beyond the reporting purview. A gas-fired, commercial water heater provides domestic hot water. Multiple backflow preventers (BFP) for building water systems and the fire suppression system were also noted. The BFPs appear to be original and will likely need to be replaced over the next ten years.

The plumbing fixtures consist of dual-level drinking fountains, tankless water closets, urinals, lavatories, and kitchen and janitorial sinks. Except for the need to replace the kitchen sinks, the plumbing fixtures will continue to serve the building well through the ten-year scope of this report.

Vertical Transportation

Two hydraulic passenger elevators serve the facility. Elevator 1 has a 2,700-pound capacity and transits two floors. Elevator 2 has 4,500-pound capacity and also serves two floors. While detailed elevator testing and inspection is not included in this assessment effort, the systems observed were in working condition and operating properly on the day of inspection. No modernization is anticipated over the next ten years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 29, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	4,256	11,901	0	0	0	0	0	0	0	0	0	0	0	$16,157
EXTERIOR	0	0	0	31,312	0	18,399	0	0	0	0	845,142	0	0	0	$894,853
INTERIOR	0	0	0	1,027,581	0	24,678	0	0	0	0	0	0	0	0	$1,052,258
PLUMBING	0	0	0	0	0	0	0	0	0	0	12,735	0	0	0	$12,735
HVAC	0	0	0	108,168	0	0	0	0	0	0	250,282	0	0	0	$358,450
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	333,590	0	0	0	0	0	$333,590
ELECTRICAL	0	0	0	0	0	18,307	35,107	0	0	14,153	527,457	0	0	0	$595,024
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$4,256	$11,901	$1,167,061	$0	$61,384	$35,107	$0	$333,590	$14,153	$1,635,616	$0	$0	$0	$3,263,067
TOTAL NONRECURRING PROJECT NEEDS			$16,157	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,246,910	

CURRENT REPLACEMENT VALUE	$26,875,000
FACILITY CONDITION NEEDS INDEX	0.12
FACILITY CONDITION INDEX	0.04

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
72,000	$3,263,067	$45.32

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$16,157	$0	$16,157
EXTERIOR	$0	$894,853	$894,853
INTERIOR	$0	$1,052,258	$1,052,258
PLUMBING	$0	$12,735	$12,735
HVAC	$0	$358,450	$358,450
FIRE/LIFE SAFETY	$0	$333,590	$333,590
ELECTRICAL	$0	$595,024	$595,024
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$16,157**	**$3,246,910**	**$3,263,067**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3090AC02	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	4,256
3090AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	11,901
				TOTAL	**$16,157**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3090	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DR			B2030	Deferred Renewal	946
3090	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL			B2030	Deferred Renewal	6,625
3090	DR36	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL			B2030	Deferred Renewal	7,122
3090	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	Deferred Renewal	16,618
3090	EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	STAINED WOOD			C3010	Deferred Renewal	14,067
3090	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	613,156
3090	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2004			C3020	Deferred Renewal	376,819
3090	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			MECH RMS	C3020	Deferred Renewal	23,539
3090	BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				D3060	Deferred Renewal	71,049
3090	BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				D3060	Deferred Renewal	37,119
3090	DR17	DOOR, EXTERIOR, SLIDING ENTRANCE SYSTEM, POWERED	GLASS			B2030	2019	18,399
3090	IF04	FLOORING - VINYL SHEET, STANDARD			SINGLE RR, BRKRMS	C3020	2019	20,742
3090	IF26	INTERIOR STAIR TREAD AND LANDING FINISH				C3020	2019	3,935
3090	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD-HWP-5	1530	M2-3	D5010	2019	3,554
3090	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD-HWP-4	1531	M2-3	D5010	2019	3,554
3090	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD AHU3 RF	1893	M2-2	D5010	2019	3,554
3090	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD AHU2 RF	1892	M2-2	D5010	2019	3,554

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3090	LE01	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED NON-HID		NORTH ENTRANCE	D5020	2019	2,941
3090	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL	LUTRON CNTRLS		E1-2	D5020	2019	1,148
3090	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD CHWP-3	1543	M2-1	D5010	2020	6,433
3090	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD CHWP-4	1544	M2-1	D5010	2020	6,433
3090	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD AHU1 RF	1545	M2-1	D5010	2020	6,433
3090	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	VFD AHU3 SF	1890	M2-2	D5010	2020	7,904
3090	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	VFD AHU2 SF	1891	M2-2	D5010	2020	7,904
3090	FA01	FIRE ALARM SYSTEM - DEVICES			BDF	D4030	2022	309,458
3090	FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS	BDF		BDF	D4030	2022	24,131
3090	VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	VFD AHU1 SF	1546	M2-1	D5010	2023	14,153
3090	DR28	DOOR OPERATOR, POWER-ASSIST	EXT GLASS DRS			B2030	2024	13,541
3090	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			B2030	2024	67,703
3090	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT			B3010	2024	763,898
3090	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2024	2,318
3090	BF01	BACKFLOW PREVENTER (<=1 INCH)	MKUP BFP		M2-3	D2020	2024	1,006
3090	BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP		M1-1	D2020	2024	1,006
3090	BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	1934	M1-1	D2020	2024	8,406

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3090	BA10	HVAC CONTROLS - TERMINAL ASSEMBLIES - LIBRARY				D3060	2024	250,282
3090	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	DECORATIVE WL MTS		EAST ENTRANCE	D5020	2024	1,831
3090	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	DECORATIVE WL MTS		WEST ENTRANCE	D5020	2024	4,577
3090	LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY				D5020	2024	521,049
							TOTAL	**$3,246,910**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	3090AC02	INTERIOR STAIR UPGRADES	2	$4,256
2	3090AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$11,901
		TOTAL FOR PLANT ADAPTION		**$16,157**
		GRAND TOTAL:		**$16,157**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	3090AC02	2	Plant Adaption	INTERIOR STAIR UPGRADES	$4,256
2	3090AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$11,901
				TOTAL FOR ACCESSIBILITY	**$16,157**
				GRAND TOTAL:	**$16,157**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	3090AC02	**Category Code:**	AC3B
Priority Sequence:	1		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/25/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Item Only: Floor(s) 2
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades for stair one and the addition of extensions to the railings on the main stair number two meet the twelve-inch horizontal requirement.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Switchback handrail/ guardrail system per floor	FLR	1	$2,000	$2,000	$1,061	$1,061	$3,061
			Base Material/Labor Costs	**$2,000**		**$1,061**	
			Indexed Material/Labor Costs	**$1,988**		**$1,070**	**$3,058**
					Construction Mark Up at 20.0%		**$612**
					Original Construction Cost		**$3,669**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$3,669**
					Professional Fees at 16.0%		**$587**
					TOTAL PROJECT COST		**$4,256**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	3090AC01	**Category Code:** AC3F	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/25/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all persons. The drinking fountains are not properly recessed or protected by cane barriers. To ensure a barrier free environment, it is recommended that the drinking fountains be properly recessed or protected by cane barriers.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	2	$932	$1,865	$3,321	$6,643	$8,508
			Base Material/Labor Costs	**$1,865**		**$6,643**	
			Indexed Material/Labor Costs	**$1,853**		**$6,696**	**$8,550**
					Construction Mark Up at 20.0%		**$1,710**
					Original Construction Cost		**$10,259**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$10,259**
					Professional Fees at 16.0%		**$1,642**
					TOTAL PROJECT COST		**$11,901**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				3,890	SF	$82,082	2004	25		2029
WN05	GLASS, STOREFRONT				1,820	SF	$229,427	2004	40		2044
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				7,280	SF	$1,176,224	2004	40		2044
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	CMMRCL HDW			1	LEAF	$3,022	2004	25		2029
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			14	LEAF	$42,311	2004	25		2029
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			7	LEAF	$14,046	2004	40		2044
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			6	LEAF	$12,039	2004	40		2044
DR17	DOOR, EXTERIOR, SLIDING ENTRANCE SYSTEM, POWERED	GLASS			1	EA	$18,399	2004	15		2019
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			10	EA	$67,703	2004	20		2024
DR28	DOOR OPERATOR, POWER-ASSIST	EXT GLASS DRS			2	EA	$13,541	2004	20		2024
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DR			1	EA	$946	2004	12	1	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL			7	EA	$6,625	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			14	EA	$16,618	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL			6	EA	$7,122	2004	12	1	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT			36,500	SF	$763,898	2004	20		2024
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL			48	LEAF	$106,149	2004	60		2064

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			28	LEAF	$102,719	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL			64	LEAF	$234,786	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	SECURITY HDW			1	LEAF	$3,669	2004	60		2064
DR04	DOOR, SLIDING SYSTEM, INTERIOR	GLASS			1	EA	$18,399	2004	25		2029
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NON-RATED DRS			48	EA	$36,139	2004	35		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED INT DRS			64	EA	$48,186	2004	35		2039
DR26	DOOR PANIC HARDWARE, INTERIOR	INTERIOR DRS			28	EA	$33,235	2004	30		2034
DR27	DOOR LOCK, SECURITY, INTERIOR	INTERIOR DR			1	EA	$1,463	2004	25		2029
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				100	LF	$56,088	2004	30		2034
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD	STAINED WOOD			2,500	SF	$14,067	2004	12	1	DR
IW01	WALL FINISH - APPLIED, STANDARD				219,690	SF	$613,156	2004	12	1	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			RESTROOMS	11,560	SF	$468,199	2004	60		2064
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2004			31,630	SF	$376,819	2004	12	1	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2015			5,580	SF	$66,476	2015	12	1	2028
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2016			9,300	SF	$110,794	2016	12		2028
IF04	FLOORING - VINYL SHEET, STANDARD			SINGLE RR, BRKRMS	1,840	SF	$20,742	2004	15		2019

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			RRS, 1ST FL CRDR	6,120	SF	$215,832	2004	40		2044
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			MECH RMS	6,730	SF	$23,539	2004	10	3	DR
IF26	INTERIOR STAIR TREAD AND LANDING FINISH				1	FLR	$3,935	2004	15		2019
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				42,840	SF	$476,817	2004	45		2049
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2004			14,690	SF	$41,000	2004	24		2028
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	2016			3,670	SF	$10,243	2016	24		2040
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 2	V-AC3A-LVT-RC-B90-SYS0002, 4417	E2-2	1	EA	$412,774	2004	25		2029
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	V-AC3A-LVT-RC-B90-SYS0001, 4418	E2-2	1	EA	$361,177	2004	25		2029
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	$5,388	2004	25		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				16	EA	$21,619	2004	35		2039
FX04	PLUMBING FIXTURE - SINK, KITCHEN				3	EA	$2,318	2004	20		2024
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	$3,329	2004	50		2054
FX10	PLUMBING FIXTURE - URINAL				5	EA	$5,393	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				19	EA	$32,204	2004	35		2039
BF01	BACKFLOW PREVENTER (<=1 INCH)	MKUP BFP		M2-3	1	EA	$1,006	2004	20		2024

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP		M1-1	1	EA	$1,006	2004	20		2024
BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	1934	M1-1	1	EA	$8,406	2004	20		2024
PS10	SUPPLY PIPING SYSTEM - LIBRARY				72,000	SF	$343,621	2004	50		2054
WH02	WATER HEATER - COMMERCIAL, GAS (<87-168 MBH INPUT)	DWH	1533	M2-3	150	MBH	$14,001	2004	25		2029
PD10	DRAIN PIPING SYSTEM - LIBRARY				72,000	SF	$514,728	2004	60		2064
BL26	BOILER - GAS (800-1500 MBH)	B-3	1527	M2-3	930	MBH	$51,343	2004	28		2032
BL26	BOILER - GAS (800-1500 MBH)	B-2	1526	M2-3	930	MBH	$51,343	2004	28		2032
BL26	BOILER - GAS (800-1500 MBH)	B-1	1525	M2-3	930	MBH	$51,343	2004	28		2032
CH15	CHILLER - SPLIT RECIPROCATING OR SCROLL (75-150 TONS)	CH101	9141	SW EXTERIOR	120	TON	$153,035	2014	30		2044
CH15	CHILLER - SPLIT RECIPROCATING OR SCROLL (75-150 TONS)	CH102	9140	SW EXTERIOR	90	TON	$114,776	2014	30		2044
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	DDXS1	5606 / 5437	ROOF	2	TON	$4,025	2012	25		2037
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	VRVIII	5605	ROOF	8	TON	$20,672	2012	20		2032
AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	AHU2	1897	M2-2	20	HP	$122,893	2004	35		2039
AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	AHU3	1896	M2-2	20	HP	$122,893	2004	35		2039
AH13	AIR HANDLING UNIT - INDOOR (45-63 HP)	AHU1	1547	M2-1	50	HP	$232,930	2004	35		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	6258	ROOF	1	EA	$3,773	2004	25		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2	1550	M2-1	1	HP	$1,321	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF		M2-3	1	HP	$1,321	2004	35		2039
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-1	1902	M2-2	1	HP	$1,321	2004	35		2039
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	AHU3 RF		M2-2	8	HP	$14,406	2004	40		2044
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	AHU2 RF		M2-2	8	HP	$18,007	2004	40		2044
FN35	FAN - UTILITY SET, 1/4" SP (12-17 HP)	AHU1 RF		M2-1	15	HP	$23,457	2004	40		2044
HV10	HVAC DISTRIBUTION NETWORKS - LIBRARY				72,000	SF	$2,743,880	2004	45		2049
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-1	6640	M2-1	5	HP	$8,463	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-2	1540	M2-1	5	HP	$8,463	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4	1529	M2-3	8	HP	$10,833	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-5	1528	M2-3	8	HP	$10,833	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	6641	M2-3	1	HP	$1,354	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-3	1523	M2-3	1	HP	$1,354	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	1977	M2-3	1	HP	$508	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	1532	M2-3	1	HP	$508	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-8	1894	M2-2	1	HP	$339	2004	30		2034

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-7	1895	M2-2	1	HP	$339	2004	30		2034
PH02	PUMP - ELECTRIC (10 - 15 HP)	CHWP-3	1542	M2-1	15	HP	$22,406	2004	35		2039
PH02	PUMP - ELECTRIC (10 - 15 HP)	CHWP-4	1541	M2-1	15	HP	$22,406	2004	35		2039
TK32	EXPANSION TANK, DIAPHRAGM (100-249 GAL)	ET-1	1538	M2-1	132	GAL	$5,095	2004	25		2029
TK32	EXPANSION TANK, DIAPHRAGM (100-249 GAL)	ET-2	1522	M2-3	132	GAL	$5,095	2004	25		2029
BA10	HVAC CONTROLS - TERMINAL ASSEMBLIES - LIBRARY				72,000	SF	$250,282	2004	20		2024
BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				72,000	SF	$71,049	2004	10	3	DR
BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				72,000	SF	$37,119	2004	10	3	DR
FS01	FIRE SPRINKLER SYSTEM - WET				72,000	SF	$974,062	2004	80		2084
FA01	FIRE ALARM SYSTEM - DEVICES			BDF	72,000	SF	$309,458	2004	18		2022
FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS	BDF		BDF	1	EA	$24,131	2004	18		2022
SE10	ELECTRICAL DISTRIBUTION NETWORK - LIBRARY				72,000	SF	$846,574	2004	50		2054
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	SDP-S & SDP-N		E1-1	800	AMP	$58,271	2004	40		2044
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP	1931/32	E1-1	1,600	AMP	$129,616	2004	40		2044
TX28	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (112.5-150 KVA)	TX-TS & TN	1960/61	E1-1	145	KVA	$21,017	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	VFD CHWP-1	5435	M2-1	5	HP	$3,633	2014	15		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	VFD CHWP-2	5436	M2-1	5	HP	$3,633	2014	15		2029
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD-HWP-5	1530	M2-3	8	HP	$3,554	2004	15		2019
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD-HWP-4	1531	M2-3	8	HP	$3,554	2004	15		2019
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD AHU3 RF	1893	M2-2	8	HP	$3,554	2004	15		2019
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD AHU2 RF	1892	M2-2	8	HP	$3,554	2004	15		2019
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD CHWP-3	1543	M2-1	15	HP	$6,433	2004	16		2020
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD CHWP-4	1544	M2-1	15	HP	$6,433	2004	16		2020
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD AHU1 RF	1545	M2-1	15	HP	$6,433	2004	16		2020
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	VFD AHU3 SF	1890	M2-2	20	HP	$7,904	2004	16		2020
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	VFD AHU2 SF	1891	M2-2	20	HP	$7,904	2004	16		2020
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	VFD AHU1 SF	1546	M2-1	50	HP	$14,153	2004	19		2023
LE01	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED NON-HID		NORTH ENTRANCE	8	EA	$2,941	2004	15		2019
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	DECORATIVE WL MTS		EAST ENTRANCE	2	EA	$1,831	2004	20		2024
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	DECORATIVE WL MTS		WEST ENTRANCE	5	EA	$4,577	2004	20		2024
LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY				72,000	SF	$521,049	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL	LUTRON CNTRLS		E1-2	500	SF	$1,148	2004	20	-5	2019

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN04	GENERATOR - DIESEL (200-500 KW)		1936	SW EXTERIOR	350	KW	$162,669	2012	25		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS 4LS9	9122	E1-1	100	AMP	$5,527	2012	25		2037
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS 40S9A	9123	BDF	150	AMP	$5,956	2012	25		2037
						Grand Total:	$14,592,181				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DR	1	EA	$946	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL	7	EA	$6,625	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	14	EA	$16,618	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL	6	EA	$7,122	DR
C3010	WALL FINISH - APPLIED, STANDARD		219,690	SF	$613,156	DR
C3010	EXTERIOR WALL FINISH - APPLIED, STANDARD	STAINED WOOD	2,500	SF	$14,067	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2004	31,630	SF	$376,819	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		6,730	SF	$23,539	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY		72,000	SF	$37,119	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY		72,000	SF	$71,049	DR
				TOTAL DEFERRED RENEWAL COST	$1,167,061	

No Projected Component Replacement Cost for Asset No. 3090 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD-HWP-5	8	HP	$3,661	2019

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD-HWP-4	8	HP	$3,661	2019
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD AHU3 RF	8	HP	$3,661	2019
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	VFD AHU2 RF	8	HP	$3,661	2019
D5020	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED NON-HID	8	EA	$3,030	2019
B2030	DOOR, EXTERIOR, SLIDING ENTRANCE SYSTEM, POWERED	GLASS	1	EA	$18,951	2019
C3020	FLOORING - VINYL SHEET, STANDARD		1,840	SF	$21,365	2019
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL	LUTRON CNTRLS	500	SF	$1,183	2019
C3020	INTERIOR STAIR TREAD AND LANDING FINISH		1	FLR	$4,053	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$63,225**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD CHWP-3	15	HP	$6,825	2020
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD CHWP-4	15	HP	$6,825	2020
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	VFD AHU1 RF	15	HP	$6,825	2020
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	VFD AHU3 SF	20	HP	$8,385	2020
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	VFD AHU2 SF	20	HP	$8,385	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$37,246**	

No Projected Component Replacement Cost for Asset No. 3090 for 2021

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES		72,000	SF	$348,298	2022
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS	BDF	1	EA	$27,160	2022
2022		PROJECTED COMPONENT REPLACEMENT COST			$375,458	

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (40-50 HP)	VFD AHU1 SF	50	HP	$16,407	2023
2023		PROJECTED COMPONENT REPLACEMENT COST			$16,407	

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		3	EA	$2,767	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	MKUP BFP	1	EA	$1,201	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	DW BFP	1	EA	$1,201	2024
D2020	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	1	EA	$10,037	2024
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - LIBRARY		72,000	SF	$298,849	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	DECORATIVE WL MTS	2	EA	$2,186	2024

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

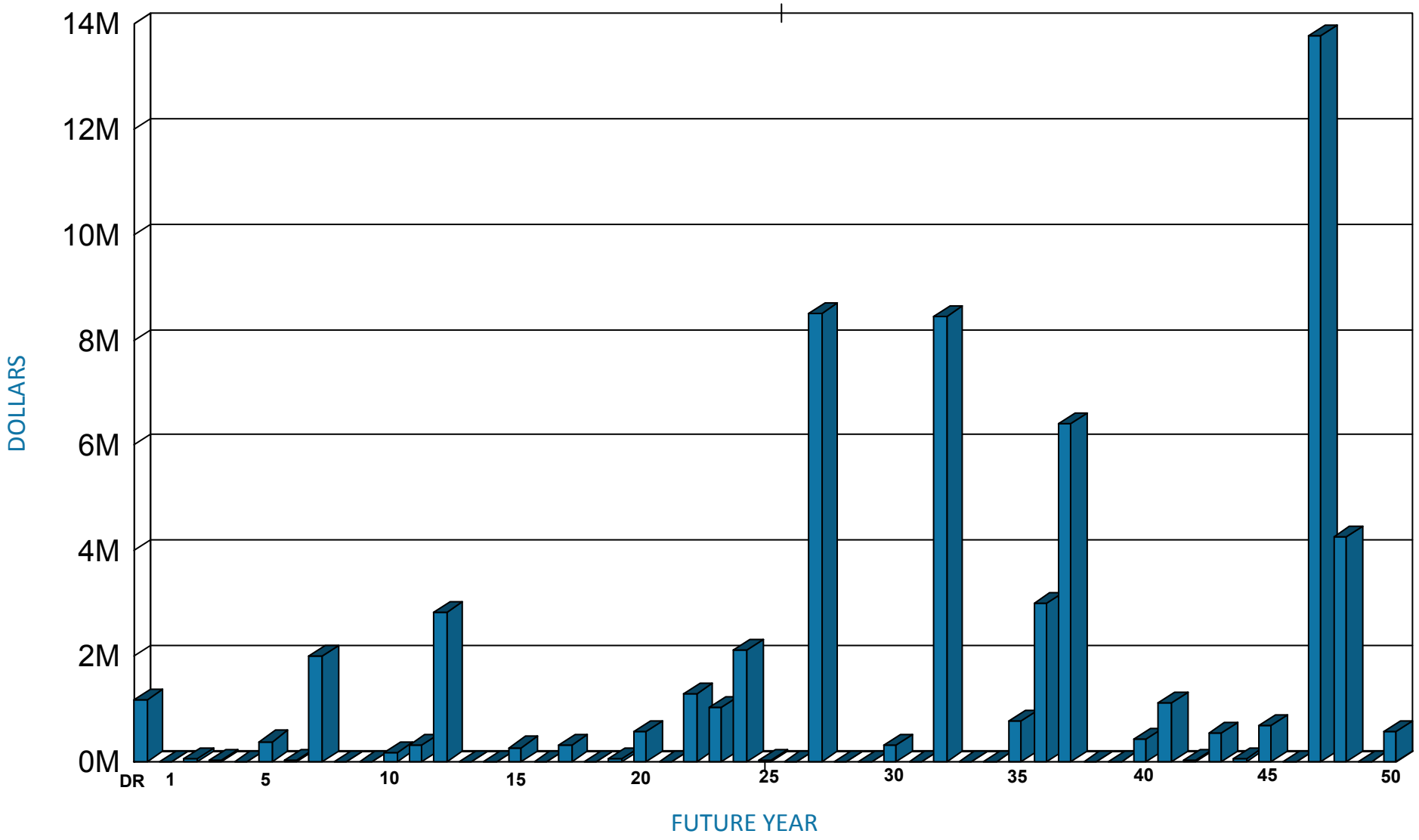
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	DECORATIVE WL MTS	5	EA	$5,465	2024
D5020	LIGHTING SYSTEM, INTERIOR - LIBRARY		72,000	SF	$622,160	2024
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS	10	EA	$80,841	2024
B2030	DOOR OPERATOR, POWER-ASSIST	EXT GLASS DRS	2	EA	$16,168	2024
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT	36,500	SF	$912,135	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,953,011**	

No Projected Component Replacement Cost for Asset No. 3090 for 2025

No Projected Component Replacement Cost for Asset No. 3090 for 2026

No Projected Component Replacement Cost for Asset No. 3090 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $6.72

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

BUILDING
9

BLDG NO. 3090

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

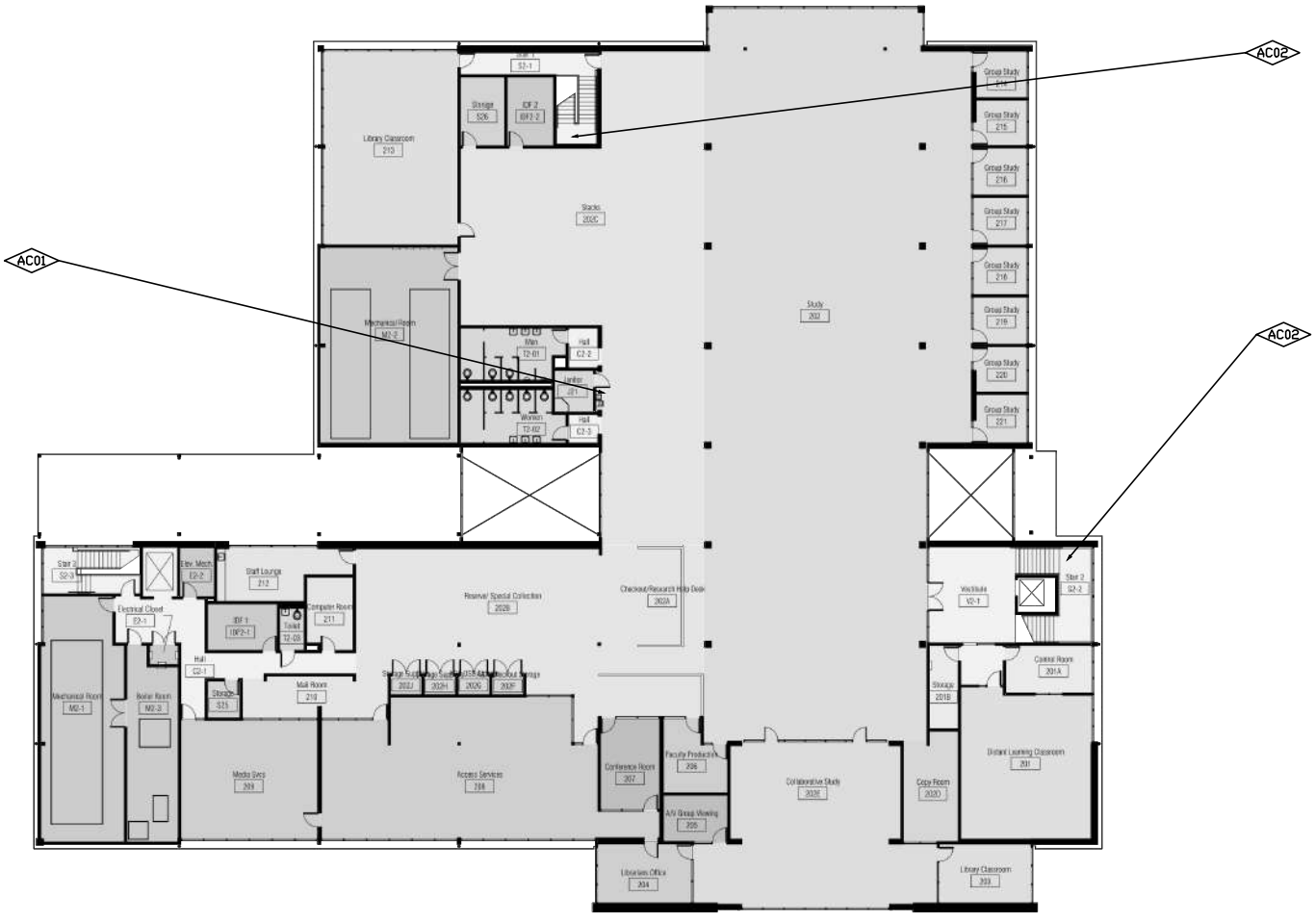
PROJECT NUMBER APPLIES TO AREA AS NOTED

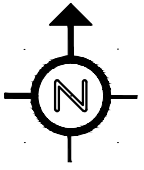
Date: 11/27/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE





BUILDING
9

BLDG NO. 3090

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/27/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

3090001a 8/29/2018
Modified-bitumen roof
Roof

3090001e 8/29/2018
Ductless DX air-cooled condenser units
Rooftop

3090002a 8/29/2018
Metal siding and stained cedar wood overhang
Roof

3090002e 8/29/2018
Recently updated VFDs for chilled water pumps
Level two, M2-1

3090003a 8/29/2018
Sealed concrete floor and unfinished surfaces
Room M2-1

3090003e 8/29/2018
Inline centrifugal exhaust fan for mechanical spaces
Level two, M2-1

3090004a 8/29/2018
Vinyl sheet flooring, painted walls, and base plumbing fixtures
Room T2-03

3090004e 8/29/2018
Typical secondary electrical network panelboard
Level two, M2-3

3090005a 8/29/2018
Carpeted floor, painted walls, and lay-in acoustical ceiling
Room 208

3090005e 8/29/2018
Commercial, gas-fired domestic water heater
Level two, M2-3

3090006a 8/29/2018
Vinyl sheet flooring, painted walls, and casework with kitchen sink
Room 212

3090006e 8/29/2018
Typical media pump and original VFDs
Level two, M2-3

3090007a 8/29/2018
Carpeted floor and applied finish surfaces
Room 202

3090007e 8/29/2018
One of two hydraulic reservoirs and controllers for elevators
Elevator machine room

3090008a 8/29/2018
Dual-level drinking fountain without proper protection
Room 202

3090008e 8/29/2018
Recessed CFL lighting in common areas
Throughout

3090009a 8/29/2018
Ceramic tile and wall-mounted lavatories
Restroom T2-01

3090009e 8/29/2018
Typical ductless DX evaporator unit
Level two, IDF room

3090010a 8/29/2018
Ceramic tile and wall-mounted urinals
Restroom T2-01

3090010e 8/29/2018
Larger cab of the two hydraulic elevators
Elevator two

3090011a 8/29/2018
Ceramic tile and wall-mounted water closets
Restroom T2-01

3090011e 8/29/2018
T8 lay-in open-cell parabolic light fixtures
Throughout

3090012a 8/29/2018
Ceramic tile floor
Commons C1-4

3090012e 8/29/2018
One of three, variable volume, four-pipe AHUs
Level two, M2-2

3090013a 8/29/2018

Noncompliant railings

Stair 1

3090013e 8/29/2018

Typical VAV unit with reheat coils

Level two, S26

3090014a 8/29/2018

Carpeted floor and applied finish surfaces

Room 102

3090014e 8/29/2018

Lutron lighting control system, which is now obsolete

Level one, E1-2

3090015a 8/29/2018

Carpeted floor, sliding glass door, and applied finish surfaces

Room 102

3090015e 8/29/2018

One of two recently updated air-cooled scroll-type chillers

Southwest exterior

3090016a 8/29/2018

Typical office carpeted floor, painted walls, and lay-in acoustical ceilings

Room 113

3090016e 8/29/2018

Fire alarm control system

Level one, BDF

3090017a 8/29/2018

Upgraded carpeted floor, painted walls, and lay-in acoustical ceiling

Room 119

3090017e 8/29/2018

One of two ATSs for emergency electrical power

Level one, main electrical room

3090018a 8/29/2018

Brick walls and hollow-metal doors

Southwest corner

3090018e 8/29/2018

Main disconnect breaker and switchboard

Level one, main electrical room

3090019a 8/29/2018
Brick walls and glazing
Southeast corner

3090019e 8/29/2018
Fire suppression system backflow preventer valve
Level one, M1-1

3090020a 8/29/2018
Brick walls and glazing
Northeast corner

3090020e 8/29/2018
Recessed non-HID light fixtures
North entrance

3090021a 8/29/2018
Exterior sliding glass door
North elevation

3090022a 8/29/2018
Brick walls and glazing
Northwest corner

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3090
Asset Name	Building 9
Year Built or Last Energy Renovation	2004

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

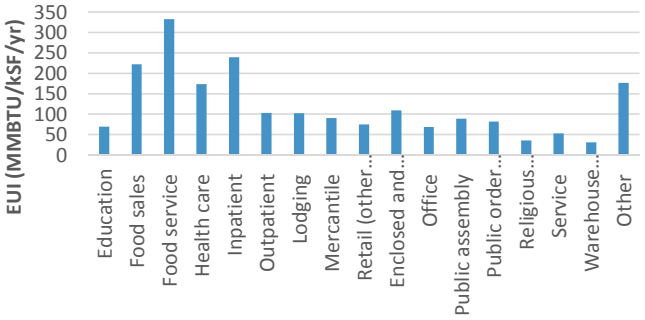
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Library
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

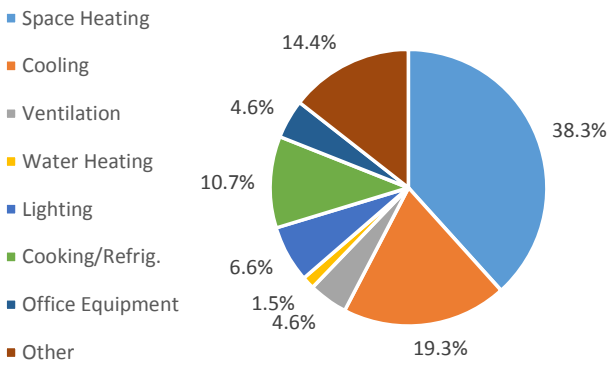


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LIBRARY	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Library



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Facility Condition Assessment

Pole Building
Asset 3200

Inspected August 28, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

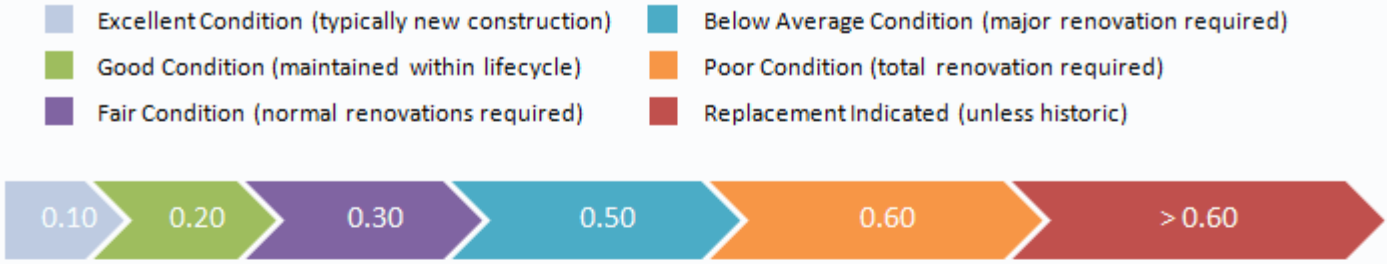
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

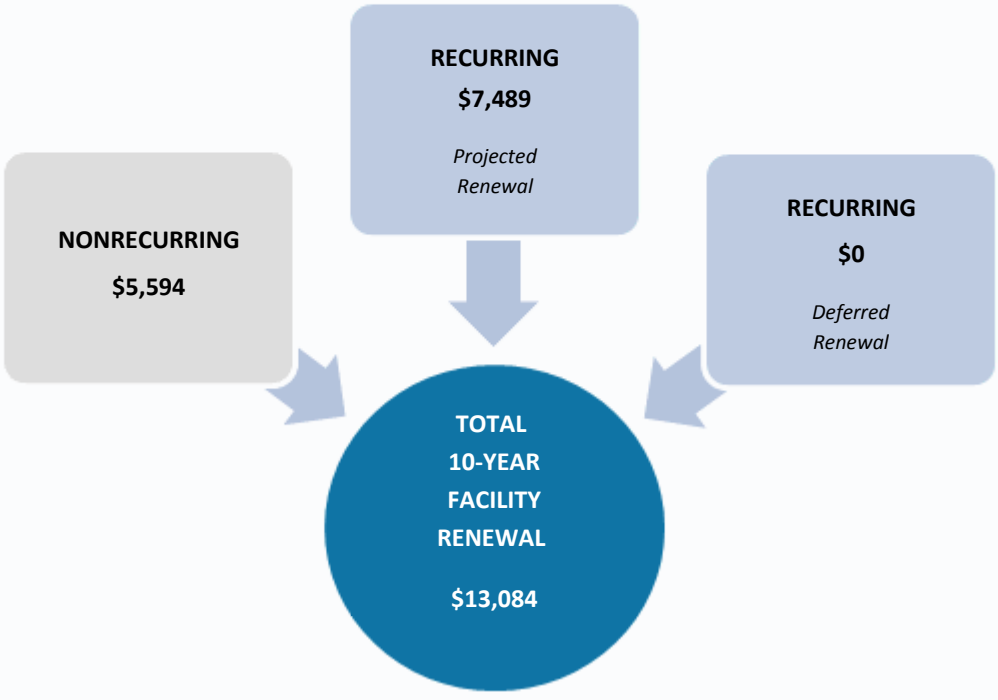
ASSET CODE	3200		
ASSET NAME	POLE BUILDING	**CURRENT REPLACEMENT VALUE**	$1,478,000
ASSET USE	Warehouse/Storage/Utility	**FACILITY CONDITION NEEDS INDEX**	0.01
YEAR BUILT	2008	**FACILITY CONDITION INDEX**	0.00
GSF	13,863	**10-YEAR $/SF**	0.94
INSPECTION DATE	08/28/2018		

FCNI Scale

The FCNI for this asset is **0.01**



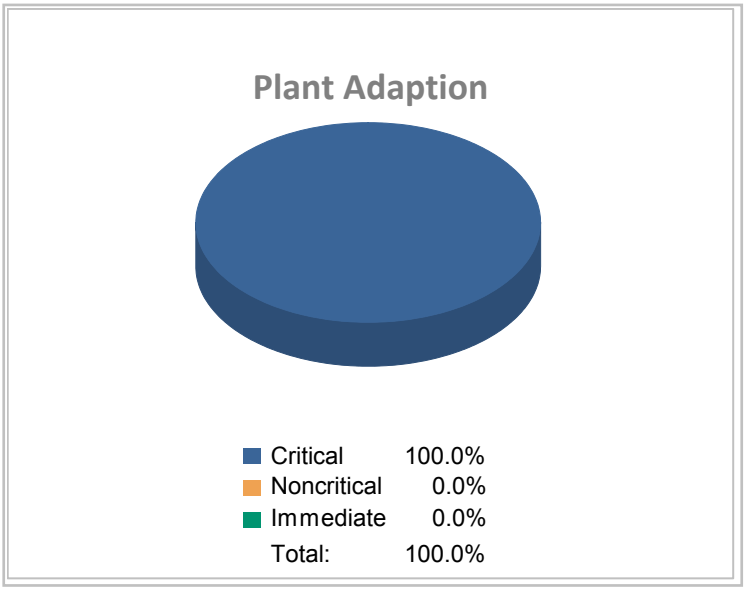
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

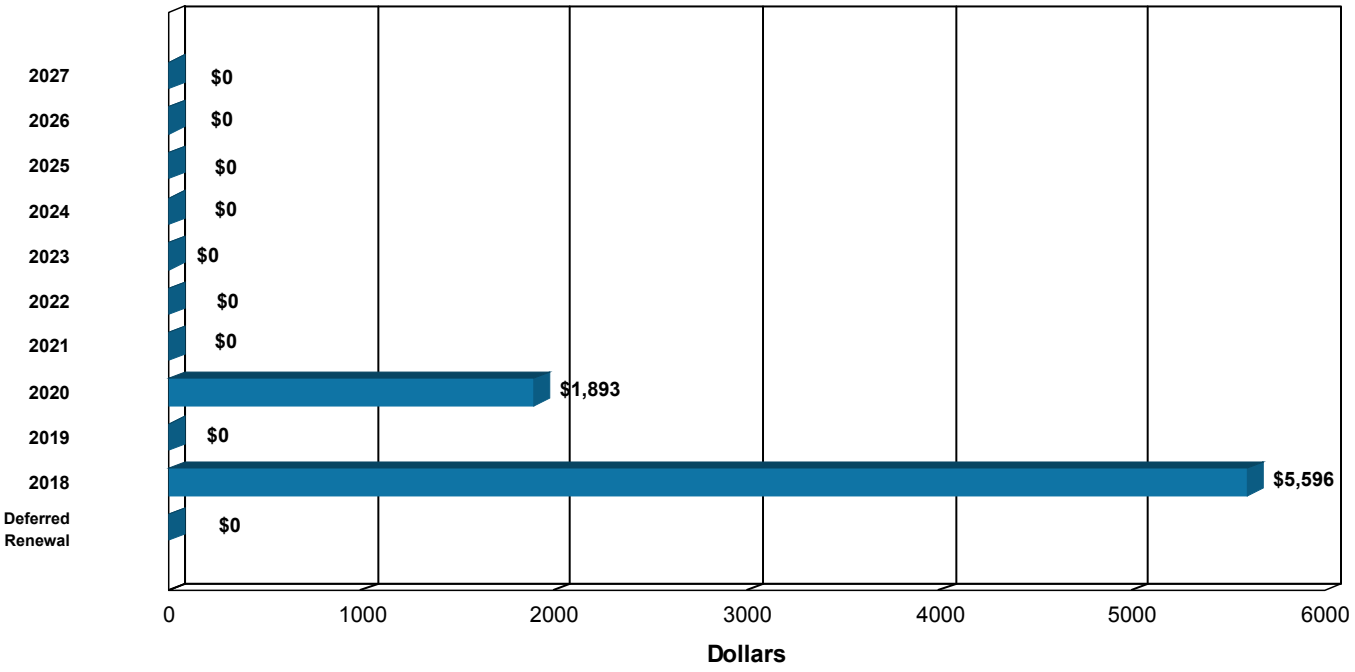
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$5,594**
3 - Noncritical	**$0**



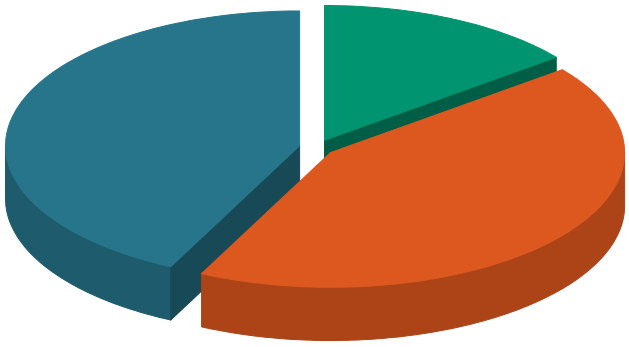
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$0	0%
Exterior	$1,893	14%
Fire/Life Safety	$5,594	43%
Health	$0	0%
HVAC	$0	0%
Interiors	$5,596	43%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$13,084**	

ASSET SUMMARY

Located to the southwest of the main Portland Community College, Rock Creek campus, the Pole Barn is next to Building 4 and the college Greenhouses. Constructed in 2008 and totaling 13,863 square feet, the structure is an open-air facility with a dirt floor. The southern elevation is walled with metal siding and there are two enclosed storage areas.

Information for this report was gathered during an on-site visit conducted on August 28, 2018.

Site

Located southwest of the main campus, the facility lies in open range and pasture land. The area immediately surrounding the building is either fenced pasture or dirt and gravel drives. These exterior surfaces are in adequate condition for the facility use and no site upgrades are recommended at this time.

Exterior Structure

The metal roof was not accessible on the day of inspection. The roof and associated gutter systems appeared to be in good condition with no reported issues. The southern metal wall, hollow-metal doors, and overhead coiling doors are in satisfactory condition with only door hardware upgrades required during the purview of this report.

Interior Finishes/Systems

The interior floors under most of the roofed-in area are dirt. The two enclosed storage areas have concrete floor finishes that should be refinished within the next two years. The storage space also has one hollow-metal door that accesses a small mechanical room. This door is in good condition.

Accessibility

Due to the use of this facility, handicapped accessibility is not necessary or recommended at this time.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and designation, and no exiting obstructions were noted or reported. However, this building is not protected by a local fire alarm system. A new point addressable main fire alarm panel with an annunciator as well as modern pull stations, audible and visible alarms, smoke and heat detectors, and an associated wiring network should be installed in accordance with current NFPA and ADA requirements.

This facility is fully protected by an automated wet-pipe fire suppression system with both fusible link and glass bulb type sprinkler heads. The system includes a fire pump controller, fire pump, and jockey pump. This relatively long-lived system appears to be in adequate condition and is anticipated to provide reliable service beyond the scope of this report, given normal testing, inspection and maintenance is completed as required per NFPA 25.

HVAC

There are no HVAC systems in this barn and none are required.

Electrical

The primary electrical equipment includes a 125-amp, residential-type panelboard and associated wiring for lighting and electrical outlets etc. The system appears to be in good condition and adequately sized for the current building use. Suspended T8 fixtures illuminate interior spaces and high-bay metal-halide lamps illuminate the exterior covered areas. Wall-mounted HIDs illuminate entrances and portions of the perimeter. Although the inspection was performed during daylight, the current lighting scheme seems to address the majority of sensible lighting opportunities. Based on typical lifecycle expectations and the wide availability of LED lighting technology, replacement of all non-LED lighting is recommended. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Plumbing

Supply and drain piping is limited for this type of facility. Where observable, supply, vent, and stormwater piping is copper and cast-iron construction. No issues with the piping were observed or reported and there are no recommendations at this time.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
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carlm@isescorp.com

Date of Inspection

August 28, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	0	0	0	0	0	1,893	0	0	0	0	0	0	0	$1,893
INTERIOR	0	0	0	0	5,596	0	0	0	0	0	0	0	0	0	$5,596
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	5,594	0	0	0	0	0	0	0	0	0	0	0	0	$5,594
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$5,594	$0	$0	$5,596	$0	$1,893	$0	$0	$0	$0	$0	$0	$0	$13,084
TOTAL NONRECURRING PROJECT NEEDS			$5,594	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$7,489	

CURRENT REPLACEMENT VALUE	$1,478,000
FACILITY CONDITION NEEDS INDEX	0.01
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
13,863	$13,084	$0.94

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$0	$1,893	$1,893
INTERIOR	$0	$5,596	$5,596
PLUMBING	$0	$0	$0
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$5,594	$0	$5,594
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$5,594**	**$7,489**	**$13,084**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
3200FS01	FIRE ALARM SYSTEM INSTALLATION	D5030	2	Plant Adaption	5,594
				TOTAL	**$5,594**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
3200	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2018	5,596
3200	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2020	1,893
							TOTAL	**$7,489**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	3200FS01	FIRE ALARM SYSTEM INSTALLATION	2	$5,594
		TOTAL FOR PLANT ADAPTION		**$5,594**
		GRAND TOTAL:		**$5,594**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	3200FS01	2	Plant Adaption	FIRE ALARM SYSTEM INSTALLATION	$5,594
				TOTAL FOR FIRE/LIFE SAFETY	**$5,594**
				GRAND TOTAL:	**$5,594**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

FIRE ALARM SYSTEM INSTALLATION

Project Number:	3200FS01
Priority Sequence:	1
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	9/25/2018

Category Code: FS2A

System:	FIRE/LIFE SAFETY
Component:	DETECTION ALARM
Element:	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	702.1	Not Applicable	Floor-wide: Floor(s) 1
NFPA	1.101		

Description

Install a modern fire alarm system to serve this facility. Specify a point addressable supervised main fire alarm panel with an annunciator. This includes pull stations, audible and visible alarms, smoke and heat detectors, and an associated wiring network. Install all devices in accordance with current NFPA and ADA requirements. The system should be monitored to report activation or trouble to an applicable receiving station.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Smoke and heat detectors, manual pull stations, audible and visual alarms, wiring, conduit, and cut and patching materials	SF	1,500	$0.92	$1,380	$0.68	$1,020	$2,400
Fire alarm control panel (up to 50 points), annunciator, and cut and patch materials	EA	1	$844	$844	$774	$774	$1,618
			Base Material/Labor Costs	**$2,224**		**$1,794**	
			Indexed Material/Labor Costs	**$2,211**		**$1,808**	**$4,019**
					Construction Mark Up at 20.0%		**$804**
					Original Construction Cost		**$4,823**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$4,823**
					Professional Fees at 16.0%		**$772**
					TOTAL PROJECT COST		**$5,594**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				5,000	SF	$68,027	2008	30		2038
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				2	LEAF	$4,013	2008	40		2048
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK			STORAGE RMS	200	SF	$20,838	2008	30		2038
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS			STORAGE RMS	2	EA	$4,189	2008	30		2038
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	$1,893	2008	12		2020
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	PITCHED METAL			14,000	SF	$239,212	2008	40		2048
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED				630	LF	$12,026	2008	20		2028
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED		0	MECH RM	1	LEAF	$3,669	2008	60		2068
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR		0	MECH RMS	1	EA	$753	2008	35		2043
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				1,600	SF	$5,596	2008	10		2018
PS23	SUPPLY PIPING SYSTEM - WAREHOUSE	THROUGHOUT			13,863	SF	$3,726	2008	50		2058
PD23	DRAIN PIPING SYSTEM - WAREHOUSE	THROUGHOUT			13,863	SF	$5,599	2008	60		2068
FS02	FIRE SPRINKLER SYSTEM - DRY	THROUGHOUT		SPRINKLER RM	13,863	SF	$63,137	2008	25		2033
SE23	ELECTRICAL DISTRIBUTION NETWORK - WAREHOUSE	THROUGHOUT			13,863	SF	$43,151	2008	50		2058
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)				3	EA	$4,167	2008	20		2028
LI23	LIGHTING SYSTEM, INTERIOR - WAREHOUSE	THROUGHOUT			13,863	SF	$80,532	2008	20		2028

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$560,528				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 3200 for DR

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		1,600	SF	$5,596	2018
2018	PROJECTED COMPONENT REPLACEMENT COST				$5,596	

No Projected Component Replacement Cost for Asset No. 3200 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$2,008	2020
2020	PROJECTED COMPONENT REPLACEMENT COST				$2,008	

No Projected Component Replacement Cost for Asset No. 3200 for 2021

No Projected Component Replacement Cost for Asset No. 3200 for 2022

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 3200 for 2023

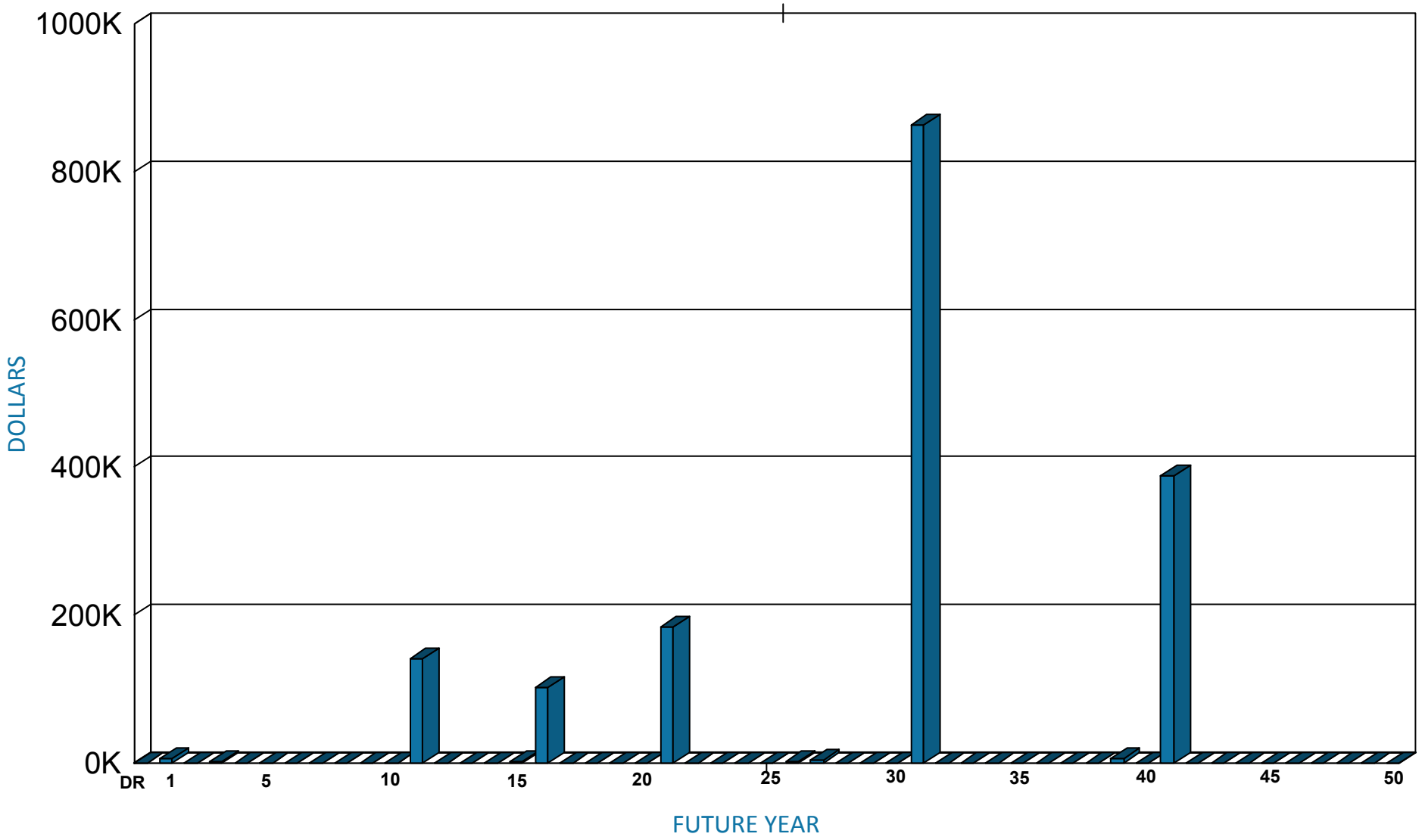
No Projected Component Replacement Cost for Asset No. 3200 for 2024

No Projected Component Replacement Cost for Asset No. 3200 for 2025

No Projected Component Replacement Cost for Asset No. 3200 for 2026

No Projected Component Replacement Cost for Asset No. 3200 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $1.05

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

NO CAD DRAWINGS ARE AVAILABLE FOR THIS BUILDING

SECTION 6

PHOTOGRAPHS

3200001a 8/28/2018
Overhead coiling doors, hollow-metal doors, and metal siding
Storage rooms

3200001e 8/28/2018
Wall-mount HID light fixture
East elevation

3200002a 8/28/2018
Concrete floor and interior metal siding
Work room

3200002e 8/28/2018
Metal-halide high-bay fixtures and dry-type fire suppression sprinkler heads
Covered structure

3200003a 8/28/2018
Mechanical space with hollow-metal door
Work room

3200003e 8/28/2018
Suspended T8 light fixtures
Interior

3200004a 8/28/2018
Exterior metal siding
Southeast corner

3200004e 8/28/2018
Electrical distribution panelboard
Storage room

3200005a 8/28/2018
Exterior finishes
East elevation

3200005e 8/28/2018
Dry-type fire suppression system
Sprinkler room

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	3200
Asset Name	Pole Building
Year Built or Last Energy Renovation	2008

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

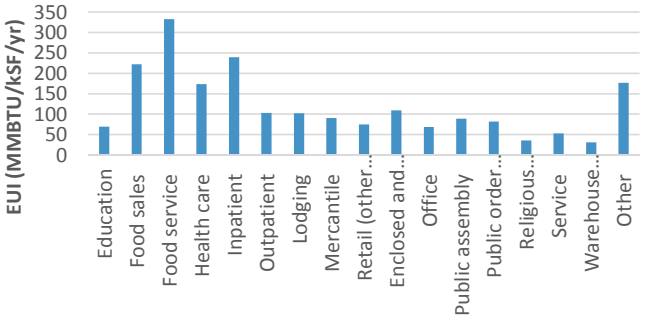
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Warehouse/Storage
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**31.3**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 21.9
Energy Efficient (consumes 10% to 30% less energy)	21.9 <= EUI <= 28.2
Similar (consumes within 10% less or 10% more energy)	28.2 < EUI < 34.4
Energy Inefficient (consumes 10% to 30% more energy)	34.4 <= EUI <= 40.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 40.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

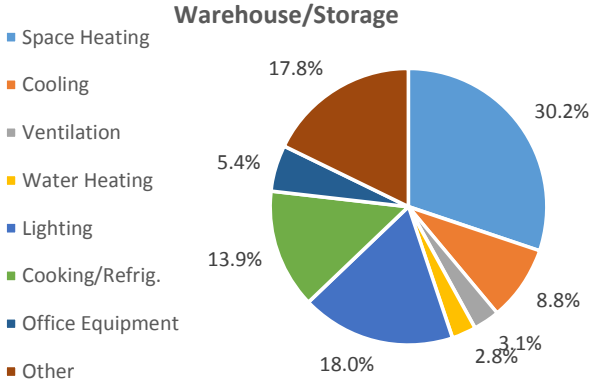


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: WAREHOUSE/STORAGE	
Space Heating	30.2%
Cooling	8.8%
Ventilation	3.1%
Water Heating	2.8%
Lighting	18.0%
Cooking/Refrig.	13.9%
Office Equipment	5.4%
Other	17.8%
Total	100.0%

Figure 2. Energy End Use Profile: Warehouse/Storage



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Roof Material	INSTALL A COOL ROOF PRODUCT. Cool roofs reflect sunlight/reduce solar heat gain. ENERGY STAR qualified cool roof products can lower roof surface temperature by up to 50°F, significantly decreasing the amount of heat transferred into a building.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC

PORTLAND COMMUNITY COLLEGE

Rock Creek Campus

Infrastructure Condition Assessment

Rock Creek Campus Infrastructure
Asset RC00

Inspected August 23, 2018

ISES CORPORATION

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INFRASTRUCTURE CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

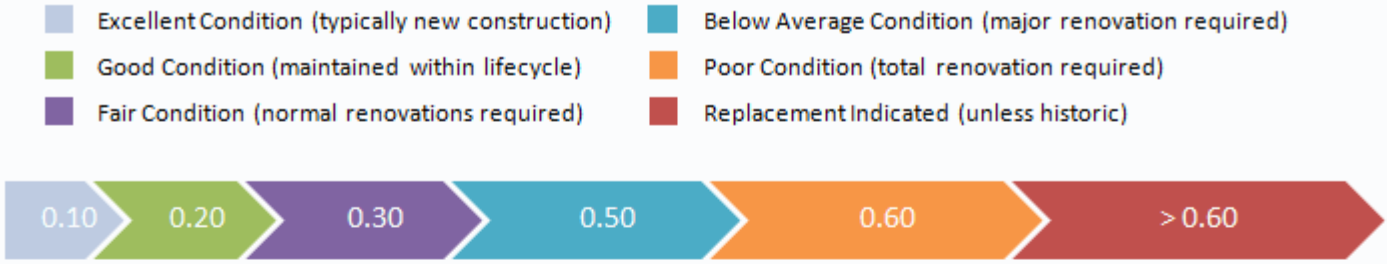
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

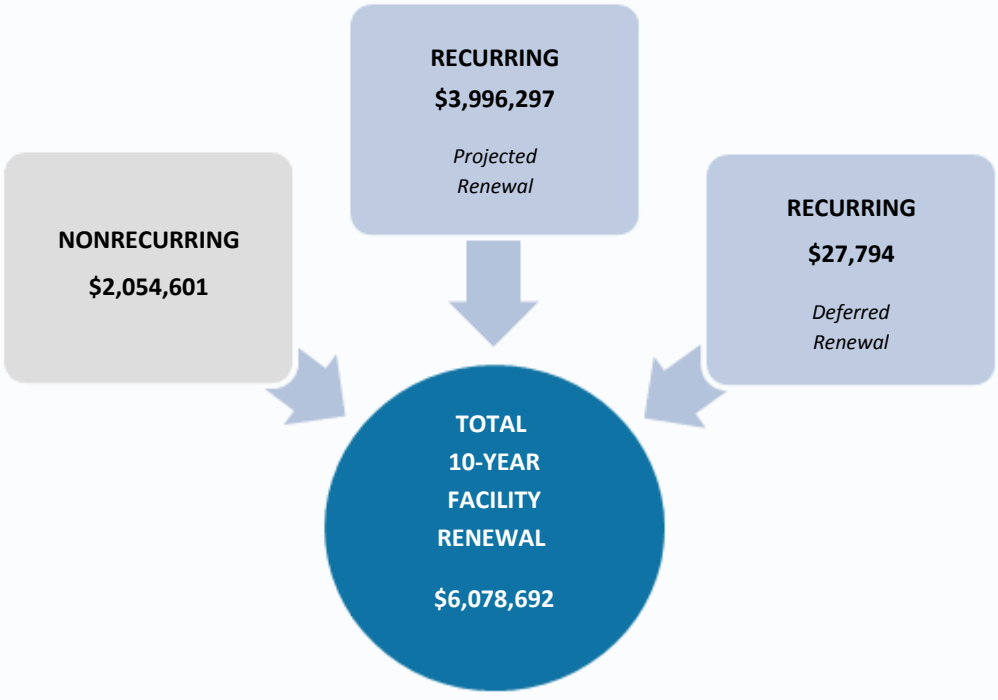
ASSET CODE	RC00	**CURRENT REPLACEMENT VALUE**	$15,047,311
ASSET NAME	ROCK CREEK CAMPUS INFRASTRUCTURE	**FACILITY CONDITION NEEDS INDEX**	0.40
ASSET USE	Infrastructure	**FACILITY CONDITION INDEX**	0.00
YEAR BUILT	1976	**10-YEAR $/SF**	8.56
GSF	710,236		
INSPECTION DATE	08/23/2018		

FCNI Scale

The FCNI for this asset is **0.40**



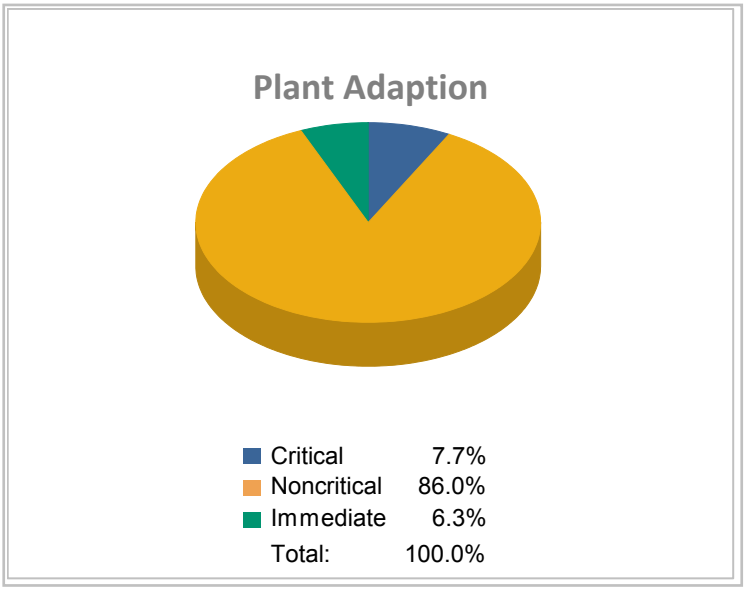
Total Facility Renewal Costs



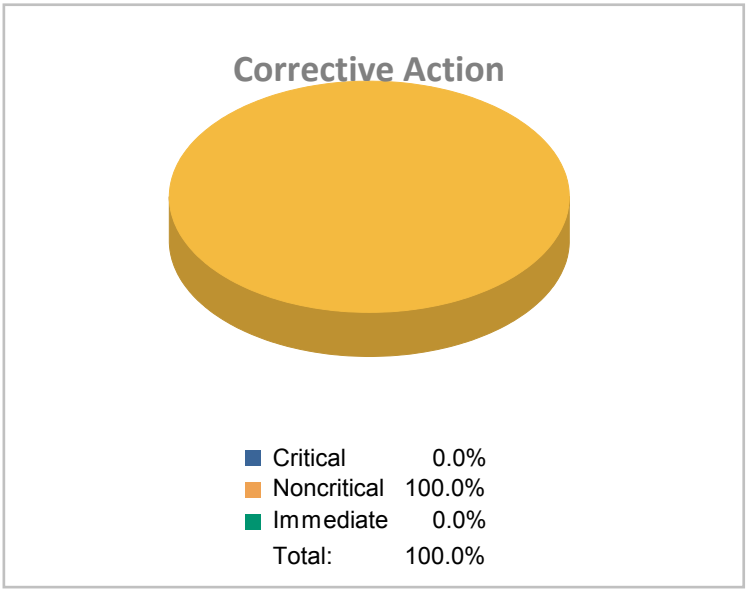
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$84,997**
2 - Critical	**$105,212**
3 - Noncritical	**$1,167,788**

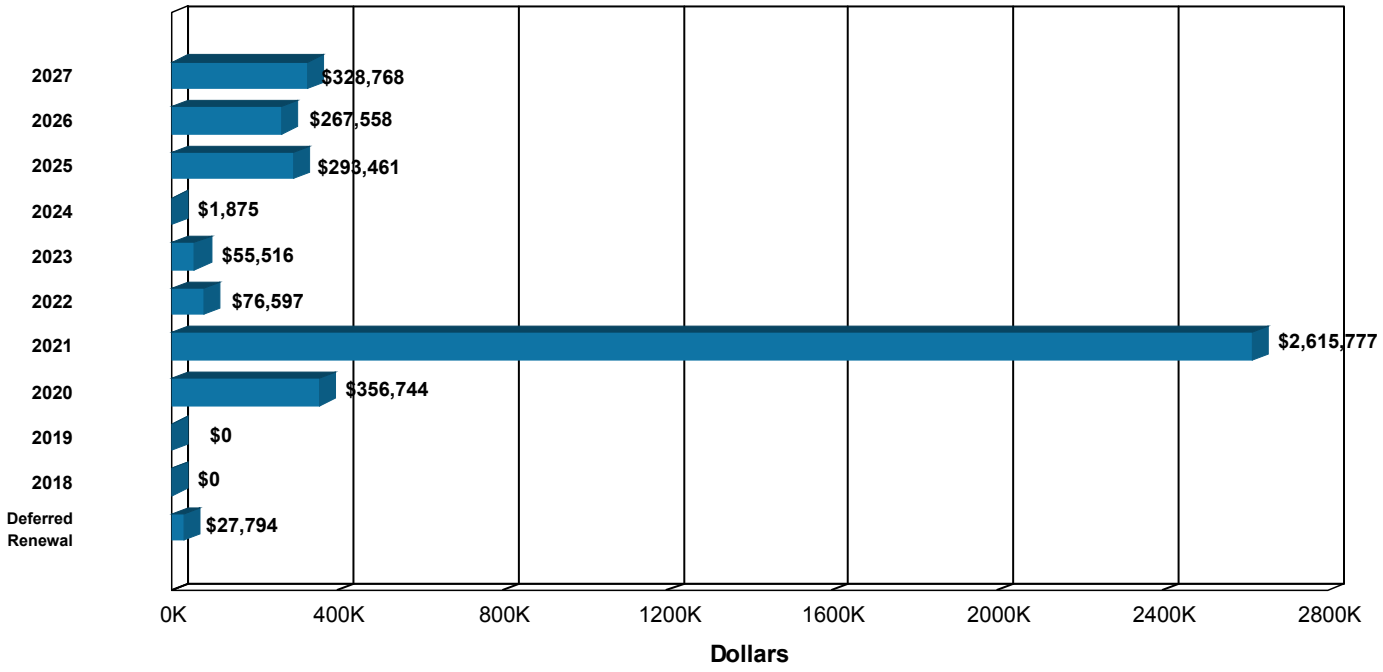


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$696,605**

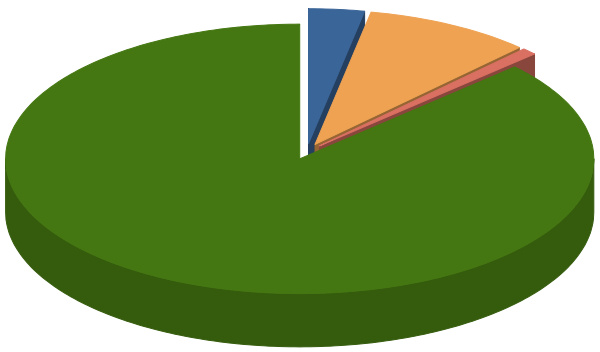


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$190,209	3%
Electrical	$560,642	9%
Exterior	$0	0%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$0	0%
Interiors	$0	0%
Plumbing	$50,786	1%
Site	$5,277,055	87%
Vert. Trans.	$0	0%
TOTAL	**$6,078,692**	

ASSET SUMMARY

The Rock Creek Campus of Portland Community College is located at 17705 NW Springville Road in Washington County, Oregon. The campus is in a rural campus setting with the area to the east and south developing into a suburban area. The campus opened with the completion of Buildings 1 and 2 in 1976, and Building 3 in 1977. Buildings 5 and 6 were added in 1980. From 1995 to 1997, Buildings 4 and 7 were completed along with an addition to Building 6. Building 9 was completed in 2004. The campus covers about 243 acres north of NW Springfield Road and east of NW 185th Avenue, with about 100 acres developed.

The Tualatin Hills Parks and Recreation Complex is located in the southeast corner of the campus property. The facilities in the complex were developed by Washington County under a cooperative agreement. This Parks and Recreation Complex is maintained by Washington County and is not included in this assessment.

Information for this report was gathered during a site visit conducted on August 23, 2018.

Parking Lots and Roads

Pavement systems deteriorate with time due to a combination of normal aging and structural fatigue. At a certain point, the rate of deterioration starts to advance rapidly. Once a pavement reaches this stage, major repair or reconstruction is usually required to restore the pavement to good condition. Usually, pavements can be maintained in good condition through simple cost-effective measures. For example, sealing cracks minimizes water intrusion into the pavement structure that can weaken subbase layers leading to structural failure. Application of a surface sealant to asphalt pavements helps seal minor cracks and reduces the environmental affects that age a pavement. Sealing joints in concrete pavements keeps incompressible debris out of the joints that lead to cracking and joint deterioration. Recommendations made in this report are based on the philosophy that the cost to maintain a pavement in good condition is far less than the cost to restore or reconstruct the pavement system. Therefore, priority is given to pavement maintenance projects over pavement restoration (mill and overlay) or reconstruction projects.

The project recommendations in this report are based on commonly used pavement maintenance and repair methods. Before initiating a project, an engineering assessment should be performed, including pavement coring or other analysis to determine the existing pavement structure, and locating and measuring areas that require full-depth patching. Based on that assessment, other pavement maintenance or repair methods may be identified that would be more suitable for the conditions, less disruptive to daily operations, or possibly more cost effective.

The following table summarizes the parking lot and road pavements reviewed during this assessment. The pavement designations and are based on published maps and field observations. Pavement areas and parking space counts were taken from “PCC Parking and Transportation Areas” drawings dated May

19, 2015, revised July 14, 2017. The accuracy of the pavement area should be confirmed with field measurements before finalizing any projects.

Table 1: Parking Lot and Road Summary

PAVEMENT	CONSTRUCTION DATE	LAST RESURFACED	TOTAL AREA (SF)	PARKING SPACES	ADA SPACES
Main Street	1976	2016 (NE split)	114,664	45	7
D Street	1980		25,770	13	0
Lot A	1976	2009(drive lanes)	174,663	536	7
Lot B	2016		4,275	8	8
Lot C	1980		185,873	502	11
Lot D	1995		92,220	250	4
Lot E - Unpaved	2005		41,503	0	0
West Access	2016		30,140	75*	NA
Bus Loop	2016		--	NA	NA
Hanger Taxiway	1976		31,687	NA	NA
		TOTALS	**703,780**	**1,429**	**37**

*An accurate count of parking spaces in unpaved Parking Lot D west of building 9 is not available.

Main Street: This roadway is the main access to the campus. The road starts at NW Springville Road and continues north to the campus buildings. At this point, the road splits to the northeast and to the west. The northeast split provides access to parking lots A and B and to the regional park. The west split provides access to parking lots C and D. Some parallel parking is provided along parts of the road. It appears the northeast split was overlaid in 2016 and this portion should not need additional repairs during the evaluation period. The rest of the asphalt pavement is in fair condition with extensive block cracking throughout and isolated areas of alligator cracking. To restore the pavement to good condition, cracks should be sealed with a polymer-modified asphalt and failing pavement areas should be repaired with full-depth patching. The pavement surface should be milled and overlaid to extend the life of the pavement. Once these projects are complete, continue with a regular program of surface sealing and restriping to maintain the pavement.

D-Street: D-Street connects Main Street to the west campus parking lots. Some parallel parking is provided along the south end of the road. The asphalt pavement is in fair condition with extensive block cracking throughout and isolated areas of alligator cracking. To restore the pavement to good condition, cracks should be sealed with a polymer-modified asphalt and failing pavement areas should be repaired with full-depth patching. The pavement surface should be milled and overlaid to extend the life of the pavement. Once these projects are complete, continue with a regular program of surface sealing and restriping to maintain the pavement.

Parking Lot A: This large asphalt parking lot is on the east side of the campus and was originally constructed in 1976. The overall pavement condition is fair, with extensive block cracking and isolated areas of alligator cracking. Previous reports indicate the pavement structure may be substandard. However, the drive lanes were overlaid about 2009 and a seal coat applied about 2015. To restore the

pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair the distressed areas with full-depth patching. Once these projects are complete, continue with a regular program of surface sealing and restriping to maintain the pavement.

Parking Lot B: This parking lot was originally on the south side of Building 5. With the construction of an addition to Building 5 in 2016, the original parking lot was replaced with a walking plaza and bus loop. The asphalt pavement of the bus loop is included in the assessment of Main Street. The new parking lot is a small asphalt area on the east side of Building 5 that provides accessible parking with direct access to the new entry plaza. The asphalt pavement is in good condition. To maintain this pavement, seal the surface in about five to seven years and repaint the pavement markings.

Parking Lot C: This asphalt parking lot is located on the west side of campus and was originally constructed in about 1980. The asphalt pavement is in good to fair condition with extensive block cracking throughout and isolated areas of alligator cracking. The pavement was last sealed and restriped in about 2014. Cracks appear to have been sealed with the same material as the surface. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair failing areas with full-depth patching. Once these repairs are complete, continue to maintain this pavement with a regular program of surface sealing. Seal the surface within the next five years and repaint the pavement markings.

Parking Lot D: This asphalt parking lot is located west of Parking Lot C and was constructed about 1995 to provide additional parking for the expanding campus. The pavement is in good condition, but has some longitudinal cracking throughout and isolated areas of block cracking. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings. Prior to resurfacing, clean and seal the cracks using a polymer-modified asphalt.

Parking Lot E: This parking lot is located south of Parking Lot C and west of Building 9. The lot has a gravel surface with bumper blocks, providing about 75 parking spaces. It was originally a construction yard in support of Building 9 construction and was reconstructed in 2005 after the building was complete. Although this parking lot was originally intended to provide overflow parking during events, it is regularly used. It should be paved with an asphalt surface to improve user safety. Concrete curbs and fixed drainage structures will be needed.

West Access Road: This access road leads from the north end of D-Street to NW 185th Avenue. Constructed in 2016, it is not regularly used due to site restrictions at NW 185th Avenue. This is a two-lane asphalt pavement with bike lanes P

Sidewalks

Pedestrian travel is supported by concrete sidewalks and plazas throughout the campus. Most of the hardscape is in good condition, consistent with the age of the campus, and constructed to modern standards. In general, the concrete flatwork should not need major repairs or replacement during the evaluation period.

A long, asphalt sidewalk runs parallel to Main Street from the NW Springville Road entrance to the split south of the bus loop. This sidewalk is in good condition, despite its age. Another asphalt sidewalk runs parallel to the West Access Road. This sidewalk is less than three years old and should not need major repairs during the evaluation period. Both of these sidewalks should be periodically sealed to minimize environmental aging of the surface. Another asphalt sidewalk runs along Main Street east of the bus loop island. This sidewalk has an uneven surface, is adjacent to the curb, and is only five-feet wide. This sidewalk should be replaced with a new concrete sidewalk meeting current standards. It could be relocated within the bus loop island. A short, narrow concrete sidewalk connects accessible parking spaces at the southeast corner of Parking Lot C with a sidewalks between Buildings 7 and 4. The connector sidewalk is faulted at the joints. Reconstruct this sidewalk with a new concrete sidewalk meeting current standards. At the same time, reconstruct the curb ramps associated with these sidewalks.

Some disintegrated granite walkways are located south of Buildings 2 and 3. These are intended for casual seating and not as main pathways. A regular maintenance program should be implemented to regrade areas that become uneven due to weather and foot traffic.

Site Lighting

Roadway and parking lot lighting is mainly provided by pole-mounted lights, either single or double lamps per pole. Most of the poles were installed from 1976 to 1980, but remain in good condition and should not need to be replaced during the evaluation period. However, the lights have been upgraded to either sodium vapor lamps or LED lamps. The sodium vapor lamps are generally in good condition. Some of these lamps will reach the end of their normal service life during the evaluation period and will probably need to be replaced. The LED lamps are in good condition and should outlast the ten-year scope of this report. The newest street lighting along the West Access Road, the bus loop, and at the south end of Main Street is also pole-mounted LED lights.

Site lighting is generally provided by pole-mounted light fixtures. The fixture housings are generally the same, and most have compact fluorescent lamps. The newer lighting has LED lamps. The site lighting is generally in good condition although the compact fluorescent lamps are expected to reach the end of their normal service life during the evaluation period and will probably need to be replaced. The LED lamps should not need replacement.

When replacing the older sodium-vapor and compact fluorescent lights, replacement fixtures should be LED lights in keeping with PCC energy conservation policies. Therefore, the costs for replacing these lights have been increased to account for the differences in material prices. All light poles are in good condition and should not need replacement during the evaluation period.

Site Accessibility

The scope of work addresses accessibility issues related to parking, path of travel from nearby public transportation stops to the campus, path of travel from accessible parking to campus circulation areas, and the overall paths of travel through the campus. Because the heart of the campus is nearly level and

relatively new, overall site accessibility is good. However, accessibility improvements are needed to comply fully with current ADA Guidelines. Some of these needed improvements were documented in the "Portland Community College Americans with Disabilities Act Barrier Removal Plan" prepared by ISES Corporation in June 2012, and in the "Portland Community College Site Accessibility Assessment" prepared by David Evans and Associates, Inc. in April 2018. Others were noted during the site visit in August 2018.

Path of Travel from Public Transportation Stops: A bus stop for the TriMet bus system is located at the main entrance from NW Springville Road. Travel from this bus stop to the main campus is by the sidewalk parallel to Main Street. However, there is no crosswalk across Main Street and the curb ramps are not located is a convenient place. Construct two new crosswalks at this location and paint a crosswalk across Main Street. Another TriMet bus stop has been added at the bus loop south of Building 5. PCC also provides a shuttle bus between campuses, with a shuttle stop at the bus loop. The bus loop is adjacent to the entry plaza south of Building 5. From the entry plaza, concrete sidewalks connect to the main campus paths of travel.

Path of Travel from Parking Areas: Travel paths are provided from Parking Lots A, B, and C to the main campus. In Parking Lot A, a concrete sidewalk provides pedestrian access through the parking lot to a wide concrete sidewalk between Buildings 2 and 6. Where the sidewalk crosses landscape islands, tactile strips are provided. Crosswalks are also provided where the walk crosses vehicle drive lanes. Parking Lot A has other travel paths. One is located at the northwest corner and connects accessible parking spaces with the entrance to Building 1. The other crosses Main Street and leads to the east entrance of Building 5. This access path includes a set of stairs constructed with a tread overhang that creates a tripping hazard. Instead of replacing the stairs, construct a wheelchair ramp to provide an additional accessible path of travel. Parking Lot B has concrete sidewalks on both the north and south sides with curb cuts for access to the main entry plaza. Parking Lot C has a sidewalk that extends from D-Street east to the main campus. This sidewalk, and other pathways from accessible parking, crosses the east side drive lanes to the sidewalk that runs parallel to the drive lanes. Curb cuts are provided in most areas, but crosswalks are not. Some of the curb cuts do not meet current code requirements and need to be reconstructed with proper slopes, landing areas, and tactile strips. Parking Lot D has accessible parking spaces at the southeast corner with access to the concrete sidewalk that leads to Building 4. This is reportedly the only accessible parking for that building complex.

Accessible Parking: Accessible parking is provided in areas close to the main campus circulation paths or to the main building entrances. The number of accessible parking spaces is more than required. However, no van accessible parking spaces are provided. Provide at least one van accessible parking space for every 8 accessible spaces. One of the accessible parking spaces in Parking Lot A is not near a building entrance or an accessible path. This space, located near the end of the Hanger Taxiway, should be moved in front of Building 6. Some accessible parking spaces have slopes more than 2 percent and need to be reconstructed to comply with the slope requirements or need to be relocated. A few accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced. Some curb cuts for the accessible parking spaces do not meet current code requirements and need to be reconstructed with proper slopes, landing areas, and tactile strips. The gravel parking lot for the Landscape Technology Complex at Building 4 does not have accessible parking or an accessible path to the building entrance. A concrete parking pad and concrete sidewalk should be added in this area.

Paths of Travel Through Campus: Because the main campus is nearly level, the paths of travel through the campus are generally free of obstructions and meet the requirements of ADA. The asphalt sidewalk in the bus loop area of Main Street was not constructed to current standards and does not meet ADA Guidelines. This sidewalk needs to be reconstructed or relocated. A project for sidewalk reconstruction is included in this assessment. The sidewalk between buildings 7 and 4 has two areas with running slopes in excess of 5 percent and handrails should be added in these areas. In Parking Lot C is a designated smoking area. This area is on a raised island with no provisions for accessibility and a curb cut should be added to this island.

Underground Utilities

Underground utilities at this site include stormwater, sanitary sewer, water, and fire protection utilities. These are discussed in the following sections. The main utility lines were installed during the initial construction phase from 1976 to 1980. Additional services were added as new buildings were constructed or expanded.

PCC personnel have expressed a desire to have a more comprehensive method to manage the underground utility assets. Available information about underground utilities is lacking, making asset management difficult. A detailed subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. Because the campus includes large open areas that have not been developed, the entire campus would probably not need to be surveyed. The survey should include a review of existing documents and recording that information on a comprehensive CAD drawing. The field work should include field locating visible utility items, such as manholes and vaults, measuring invert elevations and pipe sizes, and recording pipe and manhole materials. The information obtained from the field survey will be used to field verify the information obtained from the existing document and drawing review and to correct that information, when in error.

Each component of the underground systems has a quantifiable industry standard expected lifecycle. Information related to system performance was reviewed to determine trends that might affect that lifecycle and the future safety, reliability, and efficiency of the system. The table below shows the expected useful, reliable life of typical underground utility system components.

Table 2: Average Expected Useful Life

COMPONENT	TYPE	USEFUL LIFE (YEARS)
Storm drain pipe	Concrete	100
Storm drain pipe	Terra cotta clay	75
Storm drain pipe	Ductile iron	50
Storm drain pipe	Corrugated metal	45
Manhole	Concrete	100
Manhole	Brick masonry	75
Catch basin/drop Inlet	Concrete	100

COMPONENT	TYPE	USEFUL LIFE (YEARS)
Catch basin/drop Inlet	Brick masonry	75
Combo drain	Concrete	100
Combo drain	Brick masonry	75
Sanitary sewer pipe	Concrete	100
Sanitary sewer pipe	Vitrified clay	75
Sanitary sewer pipe	Ductile iron	50
Sanitary sewer pipe	PVC or plastic	50
Manhole	Concrete	100
Manhole	Brick masonry	75
Potable water supply line	PVC or plastic	50
Potable water supply line	Ductile iron	75
Potable water supply line	Cast-iron	75
Fire hydrant	Cast-iron	65
Fire pump	125 hp, 1,000 GPM	25
Domestic water pump	15 hp, electric	20

Source Data: ASHRAE, BOMA, Hartford Ins. Co., ISES Database

The realization of the full expected useful life preserves the original capital investment strategy while accelerated depreciation results in premature expenditure of resources. It should be emphasized that expected useful life values are averaged forecasts based on components that are properly maintained and operated without frequent and/or severe operating conditions. Chronological age is not the primary determinant of service life. In many instances, there is ample evidence of components operating well beyond predicted useful life values. This is why it is important to modify these values based on actual conditions, service history, operating conditions, installation environment, and actual field performance.

In addition, system components reaching the predicted endpoint of expected useful life do not necessarily cease to function. What does occur is a downward trend toward loss of service reliability, a potential increase in maintenance costs, damage caused by natural events, and possible loss of service due to failure.

Stormwater Drainage Systems

PCC has a commitment to sustainable practices. As part of this commitment, the stormwater drainage systems on this campus have been designed and constructed with on-site stormwater quality treatment systems. Because the ground is relatively impermeable, most of the stormwater is conveyed to an on-site detention pond, with outfall to the Bethany Creek regional detention pond.

Stormwater is collected through a system of area drains, drop inlets, and curb inlets. Stormwater is conveyed from the various inlets through corrugated metal pipes to a sedimentation manhole for further treatment. Some of the newer facilities use PVC pipe for conveyance. From the sedimentation manhole, it enters the site detention pond. This system covers most of the campus. Smaller branch

systems were installed for the west access road and for some of the farm buildings. These systems convey stormwater to low-impact drainage swales then to stormwater conveyances along NW 185th Avenue. Additional low-impact drainage features are spread throughout the landscaped areas of the campus for natural treatment of runoff. The roof drains on the north side of Buildings 2 and 3 empty onto the grassed slope to the north of the main campus.

The following table is an estimate of the stormwater system components on the Rock Creek Campus. Estimates are based on information provided on the PCC Environmental Map dated July 2008 and from the Sanitary and Stormwater Map available on-line from Clean Water Services, a regional water resources management utility.

Table 3: Summary of Stormwater Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
Catch basins, concrete	75	each	1976-1980
Catch basins, concrete	20	each	1995-2015
Concrete manholes	25	each	1976-1980
Concrete manholes	5	each	1995-2015
8 to 12-inch corrugated metal pipe	2180	LF	1976-1980
8 to 12-inch corrugated metal pipe	1080	LF	1995-2015
18-inch corrugated metal pipe	875	LF	1995
21 to 24-inch corrugated metal pipe	1985	LF	1976-1980
21 to 24-inch corrugated metal pipe	1140	LF	1995-2015
30-inch corrugated metal pipe	305	LF	1976-1980
4 to 6-inch PVC pipe	1300	LF	1995-2015
8-inch PVC pipe	1505	LF	1995-2015
10 to 12-inch PVC pipe	125	LF	1995-2015

Much of the stormwater infrastructure is about 30 to 45 years old. Some of the older corrugated metal pipe will reach the end of its normal service life during the evaluation period and may need replacement. Only the connecting pipe between Parking Lots C and D has been reported as needing replacement. No problems have been reported and no visual indications of problems were noted with the storm drain inlets during the site visit. Therefore, these components should not need to be replaced. Many of the storm drains showed a buildup of sediment and need to be cleaned. This is considered a maintenance item.

It is important to note that utility infrastructure assets normally encompass more than just a single component and will, in most situations, represent a section or group of materials, i.e. linear footage of installed piping systems. The majority of these systems will continue to operate reliably and safely beyond the ten-year planning horizon of this assessment. However, beyond the next ten years, it will be necessary to re-inspect the systems to ensure that they continue to operate reliably.

Sanitary Sewer

The sanitary sewage system for the campus is a collection and conveyance system. Because the main campus area is higher than the surrounding property, the area is served by gravity sewers. PCC does not treat its own sewage but discharges it to the municipal sewer main, which transport it to the regional wastewater treatment plant. The treatment plant and municipal lines were not part of this evaluation.

Limited information was available during this assessment. On-line information from Clean Water Services indicates a 12-inch diameter corrugated steel pipe connects the main campus to the municipal sewage main on NW Springville Road. For purposes of this assessment, it is assumed that the sewage main extends to the heart of the campus and individual buildings connect to this main with 6 to 8-inch pipe.

Table 4: Summary of Sanitary Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
12-inch corrugated steel pipe	1,800	LF	1976
8-inch pipe	1,200	LF	1976-1980
8-inch pipe	5,000	LF	1995-2015
Manholes, 10-15 ft deep	6	each	1976-1980
Manholes, 10-15 ft deep	10	each	1995-2015

No problems have been reported with the sanitary sewer conveyance system. Most of the sanitary sewer system is less than 40 years old and should not need replacement during the evaluation period. If the sewer main is actually corrugated metal pipe, the pipe is expected to reach the end of its normal service life during the evaluation period and may need to be replaced.

It is a good policy and a recommendation of this report to develop and conduct a preventative maintenance program for the sanitary sewer system. A vital part of that program is video monitoring the linear assets when and where feasible and jet-washing any built-up debris or solids in the lines and manholes to ensure that the pipes have the maximum flow capacity to handle peak demand. It is recommended that PCC start a program of jet-washing and CCTV inspections. The oldest and/or most problematic lines are typically evaluated first to determine the characteristics of the typical flow and identify any urgent or critical repair or replacement needs. Routinely CCTV inspect a portion of the infrastructure every couple of years and all lines typically at least once every ten years. With the age of this system and its expected lifecycle, it is inevitable that portions will wear out and need to be repaired or replaced. The CCTV inspections will allow PCC to identify problem areas and then plan and budget for repair or replacement.

Water Distribution and Fire Protection

Both potable water and fire protection water are supplied to the campus by direct connection to the municipal water main on NW Springville Road. Sufficient water pressure is available, so no pumps are

needed. The main water line is reported to be 12-inch ductile iron. The water main reportedly needs to be replaced. The oldest buildings are connected to the main by transite (asbestos-cement) water lines. While no problems with the transite pipe have been reported, when they need to be replaced, the associated costs of asbestos abatement and material disposal should be factored in to the cost of the work. The main water feed to the farm buildings is reportedly in poor condition and should be replaced.

The following table is an estimate of the potable water and fire protection system components that serve the Rock Creek Campus. Due to limited information available, the pipe diameters have been overestimated.

Table 5: Summary of Potable Water and Fire Protection System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
12-inch water supply main	1,800	LF	1976
6-inch asbestos cement pipe	1,000	LF	1976
6-inch water supply pipe	1,200	LF	1976-1980
6-inch water supply pipe	3,300	LF	1995-2015
Fire hydrants	10	Each	1995-2015

Most of the water distribution system is less than 40 years old and should not need to be replaced during the evaluation period. The main water line and the farm feed should be replaced within the next 5 years.

Other Considerations

In reviewing the Portland Community College Facilities Plan, a need for greatly improving the connectivity with nearby residential areas was identified including new pedestrian walkways. This would be a major project requiring a wayfinding study, construction of new multi-use paths, and new directional signage. Until the planning and design work are complete, an exact cost cannot be determined. Therefore, a project with a general allowance for this work is included in the recommendations.

Improvements to site accessibility are also recommended. Implementing the project recommendations in the Site Accessibility section should address most of these issues. In addition, a campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional inspector examined the infrastructure to determine what repairs or modifications may be necessary to restore the systems to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the site to modern standards without any anticipation of change to layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include space change, program issues, relocation, contingency, or costs that could not be identified or determined from the visual inspection and available information.

INSPECTION TEAM DATA

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Date of Inspection

August 23, 2018

Inspection Team Personnel

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DEFINITIONS

The following information is a clarification of the Infrastructure report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of systems and components. The tool for projecting the recurring renewal costs is the Lifecycle Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the systems and components. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards, not original design parameters. This index gives the college a comparison tool for identifying worst case/best case conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory is a list of major systems and components and is based on industry standard lifecycle expectancies. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the system. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the systems and components are not included in the Lifecycle Component Inventory. For each such deficiency, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the second accessibility project identified for asset 0001 would have a project number of 0001AC02 (0001 for the asset number, AC for accessibility, and 02 being the next sequential number for an accessibility project).

Project Classifications

- ### Plant Adaption
  Nonrecurring expenditures required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- ### Corrective Action
  Nonrecurring expenditures needed to correct random and unpredictable deficiencies. Such projects are not related to aligning with codes or standards. Deficiencies classified as Corrective Action could have an effect on site or utility safety and usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- ### Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a system to normal operation

- ### Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements associated with noncritical accessibility needs

  b. actions to bring a system into compliance with current codes

  c. actions to improve the usability of the system

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE

Example: Category Code = EL5A	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	AC2B	0001AC02	01
1	PL1D	0001PL02	02
2	EL4C	0001EL03	04

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	84,997	105,212	0	0	0	0	0	0	0	0	0	0	0	0	$190,209
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
PLUMBING	0	0	50,786	0	0	0	0	0	0	0	0	0	0	0	$50,786
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	293,461	0	267,181	$560,642
SITE	0	0	1,813,606	27,794	0	0	356,744	2,615,777	76,597	55,516	1,875	0	267,558	61,587	$5,277,055
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$84,997	$105,212	$1,864,392	$27,794	$0	$0	$356,744	$2,615,777	$76,597	$55,516	$1,875	$293,461	$267,558	$328,768	$6,078,692
TOTAL NONRECURRING PROJECT NEEDS			$2,054,601	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$4,024,091	

CURRENT REPLACEMENT VALUE	$15,047,311
FACILITY CONDITION NEEDS INDEX	0.40
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
710,236	$6,078,692	$8.56

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$190,209	$0	$190,209
EXTERIOR	$0	$0	$0
INTERIOR	$0	$0	$0
PLUMBING	$50,786	$0	$50,786
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$560,642	$560,642
SITE	$1,813,606	$3,463,449	$5,277,055
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$2,054,601**	**$4,024,091**	**$6,078,692**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
RC00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	84,997
RC00AC02	PARKING LOT ACCESSIBILITY UPGRADES	G2020	2	Plant Adaption	92,566
RC00AC03	BUILDING 4 ACCESSIBLE PARKING	G2020	2	Plant Adaption	12,646
RC00SI09	TAXIWAY PAVING RENEWAL		3	Corrective Action	99,696
RC00PL01	CCTV SANITARY SEWER LINES	D2030	3	Plant Adaption	50,786
RC00SI03	MAIN STREET PAVING RENEWAL	G2010	3	Corrective Action	267,031
RC00SI04	D-STREET PAVING RENEWAL	G2010	3	Corrective Action	79,828
RC00SI05	PARKING LOT A PAVING RENEWAL	G2020	3	Corrective Action	109,719
RC00SI06	PARKING LOT C PAVING RENEWAL	G2020	3	Corrective Action	76,382
RC00SI07	PARKING LOT D PAVING RENEWAL	G2020	3	Corrective Action	36,558
RC00SI08	PARKING LOT E PAVING	G2020	3	Plant Adaption	473,747
RC00SI02	SITE PEDESTRIAN PAVING RENEWAL	G2030	3	Corrective Action	27,390
RC00SI01	SUBSURFACE UTILITY ENGINEERING	G2040	3	Plant Adaption	141,771
RC00SI10	SITE WAY FINDING	G9090	3	Plant Adaption	42,445
RC00SI11	NEW CONNECTIVE PATHS	G9090	3	Plant Adaption	459,040
				TOTAL	**$2,054,601**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	TAXIWAY		HANGER	G2020	Deferred Renewal	13,897
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	TAXIWAY		HANGER	G2020	Deferred Renewal	13,897
RC00	PF05	CAST IRON PIPE - 6" DIAMETER	FARM WATER SUPPLY PIPE			G3020	2020	356,744
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT C	G2020	2021	81,515
RC00	PF16	DUCTILE IRON PIPE - 12" DIAMETER	WATER MAIN			G3010	2021	381,747
RC00	SD30	CORRUGATED METAL PIPE - 12" DIAMETER	SANITARY SEWER MAIN			G3030	2021	440,943
RC00	SD30	CORRUGATED METAL PIPE - 12" DIAMETER	8 TO 12 INCH CMP			G3030	2021	534,031
RC00	SD30	CORRUGATED METAL PIPE - 12" DIAMETER	STORM DRAIN PIPE			G3030	2021	534,031
RC00	SD33	CORRUGATED METAL PIPE - 24" DIAMETER	21 TO 24 INCH STORM DRAIN PIPE			G3030	2021	556,138
RC00	SD34	CORRUGATED METAL PIPE - 30" DIAMETER	STORM DRAIN PIPE			G3030	2021	87,373
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT A	G2020	2022	76,597
RC00	SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE			BUS LOOP	G2010	2023	1,855
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT D	G2020	2023	40,444
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			WEST ACCESS RD	G2020	2023	13,218
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT B	G2020	2024	1,875

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
RC00	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE & PKG LOTS	D5020	2025	293,461
RC00	PF05	CAST IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE			G3020	2026	267,558
RC00	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			ROADS & PKG LOTS	D5020	2027	267,181
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			D STREET	G2020	2027	11,304
RC00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			MAIN STREET	G2020	2027	50,283
							TOTAL	**$4,024,091**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
5	RC00SI09	TAXIWAY PAVING RENEWAL	3	$99,696
9	RC00SI02	SITE PEDESTRIAN PAVING RENEWAL	3	$27,390
10	RC00SI03	MAIN STREET PAVING RENEWAL	3	$267,031
11	RC00SI04	D-STREET PAVING RENEWAL	3	$79,828
12	RC00SI05	PARKING LOT A PAVING RENEWAL	3	$109,719
13	RC00SI06	PARKING LOT C PAVING RENEWAL	3	$76,382
14	RC00SI07	PARKING LOT D PAVING RENEWAL	3	$36,558
		TOTAL FOR CORRECTIVE ACTION		**$696,605**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	RC00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	1	$84,997
2	RC00AC03	BUILDING 4 ACCESSIBLE PARKING	2	$12,646
3	RC00AC02	PARKING LOT ACCESSIBILITY UPGRADES	2	$92,566
4	RC00PL01	CCTV SANITARY SEWER LINES	3	$50,786
6	RC00SI10	SITE WAY FINDING	3	$42,445
7	RC00SI11	NEW CONNECTIVE PATHS	3	$459,040

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

8	RC00SI01	SUBSURFACE UTILITY ENGINEERING	3	$141,771
15	RC00SI08	PARKING LOT E PAVING	3	$473,747
		TOTAL FOR PLANT ADAPTION		**$1,357,996**
		GRAND TOTAL:		**$2,054,601**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	RC00AC01	1	Plant Adaption	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	$84,997
2	RC00AC03	2	Plant Adaption	BUILDING 4 ACCESSIBLE PARKING	$12,646
3	RC00AC02	2	Plant Adaption	PARKING LOT ACCESSIBILITY UPGRADES	$92,566
				TOTAL FOR ACCESSIBILITY	**$190,209**
4	RC00PL01	3	Plant Adaption	CCTV SANITARY SEWER LINES	$50,786
				TOTAL FOR PLUMBING	**$50,786**
5	RC00SI09	3	Corrective Action	TAXIWAY PAVING RENEWAL	$99,696
6	RC00SI10	3	Plant Adaption	SITE WAY FINDING	$42,445
7	RC00SI11	3	Plant Adaption	NEW CONNECTIVE PATHS	$459,040
8	RC00SI01	3	Plant Adaption	SUBSURFACE UTILITY ENGINEERING	$141,771
9	RC00SI02	3	Corrective Action	SITE PEDESTRIAN PAVING RENEWAL	$27,390
10	RC00SI03	3	Corrective Action	MAIN STREET PAVING RENEWAL	$267,031
11	RC00SI04	3	Corrective Action	D-STREET PAVING RENEWAL	$79,828
12	RC00SI05	3	Corrective Action	PARKING LOT A PAVING RENEWAL	$109,719
13	RC00SI06	3	Corrective Action	PARKING LOT C PAVING RENEWAL	$76,382
14	RC00SI07	3	Corrective Action	PARKING LOT D PAVING RENEWAL	$36,558
15	RC00SI08	3	Plant Adaption	PARKING LOT E PAVING	$473,747
				TOTAL FOR SITE	**$1,813,606**
				GRAND TOTAL:	**$2,054,601**

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SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

CIRCULATION PATHWAY ACCESSIBILITY UPGRADES

Project Number:	RC00AC01	**Category Code:** AC2A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	11/5/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 405, 505, 406	Not Applicable	Item Only: Floor(s) S

Description

A bus stop for the TriMet bus system is located at the main entrance from NW Springville Road. Travel from this bus stop to the main campus is by the sidewalk parallel to Main Street. However, there is no crosswalk across Main Street and the curb ramps are not located is a convenient place. Construct two new curb cuts at this location and paint a crosswalk across Main Street. One Parking Lot A pathway crosses Main Street and leads to the east entrance of Building 5. This access path includes a set of stairs constructed with a tread overhang that creates a tripping hazard. Instead of replacing the stairs, construct a wheelchair ramp to provide an additional accessible path of travel. The sidewalk between buildings 7 and 4 has two areas with running slopes in excess of 5 percent. Handrails should be added in these areas. Parking Lot C has a sidewalk that extends from D-Street east to the main campus. This sidewalk, and other pathways from accessible parking, crosses the east side drive lanes to the sidewalk that runs parallel to the drive lanes. Curb cuts are provided in most areas, but crosswalks are not. Some of the curb cuts do not meet current code requirements and need to be reconstructed with proper slopes, landing areas, and tactile strips. Parking Lot C has a designated smoking area that is on a raised island with no provisions for accessibility. Add a curb cut to this island.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair ramp construction, including handrails	VFT	3	$2,547	$7,640	$2,255	$6,764	$14,404
Freestanding handrail system, painted	LF	120	$116	$13,926	$191	$22,919	$36,845
Concrete curb ramp construction	EA	5	$666	$3,328	$603	$3,015	$6,343
Install or replace tactile warning pads	EA	10	$262	$2,616	$32.55	$326	$2,942
Paint crosswalks where pathways cross drive lanes, 6-inch wide lines	EA	10	$27.50	$275	$15.40	$154	$429
			Base Material/Labor Costs	**$27,785**		**$33,177**	
			Indexed Material/Labor Costs	**$27,618**		**$33,443**	**$61,061**
					Construction Mark Up at 20.0%		**$12,212**
					Original Construction Cost		**$73,273**
Date of Original Estimate:	11/5/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$73,273**
					Professional Fees at 16.0%		**$11,724**
					TOTAL PROJECT COST		**$84,997**

All costs shown as Present Value

BUILDING 4 ACCESSIBLE PARKING

Project Number:	RC00AC03	**Category Code:** AC1C	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	SITE
Date Basis:	11/16/2018	**Element:**	PARKING

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The gravel parking lot for the Landscape Technology Complex at Building 4 does not have accessible parking or an accessible path to the building entrance. A concrete parking pad and concrete sidewalk should be added in this area.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct concrete parking pad	SF	400	$7.20	$2,880	$8.81	$3,524	$6,404
Construct concrete sidewalk	SF	250	$4.23	$1,058	$4.66	$1,165	$2,223
Handicapped parking space, including striping and signage	EA	1	$340	$340	$106	$106	$446
Base Material/Labor Costs				**$4,277**		**$4,795**	
Indexed Material/Labor Costs				**$4,251**		**$4,833**	**$9,085**
Construction Mark Up at 20.0%							**$1,817**
Original Construction Cost							**$10,902**
Date of Original Estimate: 11/16/2018						**Inflation**	**$0**
Current Year Construction Cost							**$10,902**
Professional Fees at 16.0%							**$1,744**
TOTAL PROJECT COST							**$12,646**

All costs shown as Present Value

PARKING LOT ACCESSIBILITY UPGRADES

Project Number:	RC00AC02	**Category Code:** AC1C	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	SITE
Date Basis:	11/5/2018	**Element:**	PARKING

Code Application:		Subclass/Savings:	Project Location:
ADAAG	502	Not Applicable	Item Only: Floor(s) S

Description

Although an adequate number of accessible parking spaces are provided on the campus, there are no van accessible spaces. At least one van accessible space should be provided for every eight accessible parking spaces. The accessible parking space near the end of the taxiway should be relocated to the front of Building 6. Some accessible parking spaces have slopes more than 2 percent and need to be reconstructed to comply with the slope requirements or should be relocated. A few accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced. Some curb cuts for the accessible parking spaces do not meet current code requirements and need to be reconstructed with proper slopes, landing areas, and tactile strips.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Handicapped parking space, including striping and signage	EA	6	$340	$2,037	$106	$637	$2,674
Concrete curb ramp construction	EA	3	$666	$1,997	$603	$1,809	$3,806
Rebuild asphalt roadway paving structure to meet slope requirements	SY	880	$28.67	$25,230	$35.84	$31,539	$56,769
ADA-compliant parking signage	EA	14	$134	$1,882	$90.93	$1,273	$3,155
Base Material/Labor Costs				**$31,146**		**$35,258**	
Indexed Material/Labor Costs				**$30,959**		**$35,540**	**$66,499**
Construction Mark Up at 20.0%							**$13,300**
Original Construction Cost							**$79,798**
Date of Original Estimate: 11/5/2018						**Inflation**	**$0**
Current Year Construction Cost							**$79,798**
Professional Fees at 16.0%							**$12,768**
TOTAL PROJECT COST							**$92,566**

All costs shown as Present Value

CCTV SANITARY SEWER LINES

Project Number:	RC00PL01	**Category Code:** PL4C	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	PLUMBING
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	11/5/2018	**Element:**	SANITARY WATER COLLECTION

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Where possible, monitor and record via closed circuit television (CCTV) existing flow characteristics and structural conditions of sanitary sewer lines from buildings to connection with City sewer lines. Jetwash the lines before performing the CCTV inspection.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Jetwash sewer lines	LF	8,000	$0.70	$5,600	$1.55	$12,400	$18,000
CCTV sewer lines	LF	8,000	$1.15	$9,200	$1.15	$9,200	$18,400
Base Material/Labor Costs				**$14,800**		**$21,600**	
Indexed Material/Labor Costs				**$14,711**		**$21,773**	**$36,484**
Construction Mark Up at 20.0%							**$7,297**
Original Construction Cost							**$43,781**
Date of Original Estimate: 11/5/2018						**Inflation**	**$0**
Current Year Construction Cost							**$43,781**
Professional Fees at 16.0%							**$7,005**
TOTAL PROJECT COST							**$50,786**

All costs shown as Present Value

TAXIWAY PAVING RENEWAL

Project Number:	RC00SI09	**Category Code:** SI1B	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/14/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The taxiway at Building 6 is an asphalt pavement used for training. The pavement is in poor condition with extensive block cracking and areas of fatigue cracking. To restore this pavement to good condition, repair the distressed areas with full-depth patching, then mill and overlay the entire pavement surface.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Mill and overlay for asphalt roadway surfaces	SY	3,521	$9.85	$34,682	$7.28	$25,633	$60,315
Full-depth patching of asphalt pavement	SY	175	$28.67	$5,017	$35.84	$6,272	$11,289
			Base Material/Labor Costs	**$39,699**		**$31,905**	
			Indexed Material/Labor Costs	**$39,461**		**$32,160**	**$71,621**
					Construction Mark Up at 20.0%		**$14,324**
					Original Construction Cost		**$85,945**
Date of Original Estimate:	11/14/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$85,945**
					Professional Fees at 16.0%		**$13,751**
					TOTAL PROJECT COST		**$99,696**

All costs shown as Present Value

SITE WAY FINDING

Project Number:	RC00SI10	**Category Code:** SI1A	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	ACCESS
Date Basis:	11/14/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

A campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wayfinding study	LOT	1	$0.00	$0	$10,000	$10,000	$10,000
Install signage	LOT	1	$18,000	$18,000	$2,500	$2,500	$20,500
Base Material/Labor Costs				**$18,000**		**$12,500**	
Indexed Material/Labor Costs				**$17,892**		**$12,600**	**$30,492**
Construction Mark Up at 20.0%							**$6,098**
Original Construction Cost							**$36,590**
Date of Original Estimate: 11/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$36,590**
Professional Fees at 16.0%							**$5,854**
TOTAL PROJECT COST							**$42,445**

All costs shown as Present Value

NEW CONNECTIVE PATHS

Project Number:	RC00SI11	**Category Code:** SI1A	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	ACCESS
Date Basis:	11/14/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

In reviewing the Portland Community College Facilities Plan, a need for greatly improving the connectivity with nearby residential areas was identified including new pedestrian walkways. This would be a major project requiring a wayfinding study, construction of new multi-use paths, and new directional signage. Until the planning and design work are complete, an exact cost cannot be determined. Therefore, a general allowance for this work is included.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Planning and Design	LOT	1	$0.00	$0	$50,000	$50,000	$50,000
New sidewalk construction	LOT	1	$133,000	$133,000	$146,000	$146,000	$279,000
			Base Material/Labor Costs	**$133,000**		**$196,000**	
			Indexed Material/Labor Costs	**$132,202**		**$197,568**	**$329,770**
					Construction Mark Up at 20.0%		**$65,954**
					Original Construction Cost		**$395,724**
Date of Original Estimate:	11/14/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$395,724**
					Professional Fees at 16.0%		**$63,316**
					TOTAL PROJECT COST		**$459,040**

All costs shown as Present Value

SUBSURFACE UTILITY ENGINEERING

Project Number:	RC00SI01	**Category Code:** SI4A	
Priority Sequence:	8		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/5/2018	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Available information about underground utilities is lacking, making asset management difficult. A level C subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. Start with a level D survey that includes review of existing documents and recording that information on a comprehensive CAD drawing. The level C survey will include field surveying to locate visible utility items, such as manholes and vaults, and measuring invert elevations and pipe sizes. The information obtained from the level C survey will be used to field verify the information obtained from the level D survey and to correct that information, when in error.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Level D subsurface utility survey	LOT	1	$2,218	$2,218	$44,960	$44,960	$47,178
Level C subsurface utility survey	LOT	1	$2,218	$2,218	$51,704	$51,704	$53,922
Base Material/Labor Costs				**$4,436**		**$96,664**	
Indexed Material/Labor Costs				**$4,409**		**$97,437**	**$101,847**
Construction Mark Up at 20.0%							**$20,369**
Original Construction Cost							**$122,216**
Date of Original Estimate: 11/5/2018						**Inflation**	**$0**
Current Year Construction Cost							**$122,216**
Professional Fees at 16.0%							**$19,555**
TOTAL PROJECT COST							**$141,771**

All costs shown as Present Value

SITE PEDESTRIAN PAVING RENEWAL

Project Number:	RC00SI02	**Category Code:** SI1A	
Priority Sequence:	9		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/5/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

An asphalt sidewalk runs along Main Street east of the bus loop island. This sidewalk has an uneven surface, is adjacent to the curb, and is only 5 feet wide. It should be replaced with a new concrete sidewalk meeting current standards. The sidewalk could be relocated within the bus loop island. A short, narrow concrete sidewalk connects accessible parking spaces at the southeast corner of Parking Lot C with a sidewalks between Buildings 7 and 4. The connector sidewalk is faulted at the joints. Reconstruct this sidewalk with a new concrete sidewalk meeting current standards. At the same time, reconstruct the curb ramps associated with these sidewalks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian asphalt walkways with concrete walkways	SF	1,640	$4.23	$6,937	$4.66	$7,642	$14,580
Concrete curb ramp construction	EA	4	$666	$2,663	$603	$2,412	$5,075
Base Material/Labor Costs				**$9,600**		**$10,054**	
Indexed Material/Labor Costs				**$9,542**		**$10,135**	**$19,677**
Construction Mark Up at 20.0%							**$3,935**
Original Construction Cost							**$23,612**
Date of Original Estimate: 11/5/2018						**Inflation**	**$0**
Current Year Construction Cost							**$23,612**
Professional Fees at 16.0%							**$3,778**
TOTAL PROJECT COST							**$27,390**

All costs shown as Present Value

MAIN STREET PAVING RENEWAL

Project Number:	RC00SI03	**Category Code:** SI1B	
Priority Sequence:	10		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/5/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

It appears the northeast split was overlaid in 2016 and should not need additional repairs during the evaluation period. The rest of the asphalt pavement is in fair condition with extensive block cracking throughout and isolated areas of alligator cracking. To restore the pavement to good condition, cracks should be sealed with a polymer-modified asphalt and failing pavement areas should be repaired with full-depth patching. The pavement surface should be milled and overlaid to extend the life of the pavement.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Direct applied crack sealant for asphalt paving	SY	12,740	$1.25	$15,925	$1.31	$16,689	$32,614
Full-depth patching of asphalt pavement	SY	75	$28.67	$2,150	$35.84	$2,688	$4,838
Scarify and overlay for asphalt roadway surfaces	SY	9,010	$9.85	$88,749	$7.28	$65,593	$154,341
			Base Material/Labor Costs	**$106,824**		**$84,970**	
			Indexed Material/Labor Costs	**$106,183**		**$85,650**	**$191,833**
					Construction Mark Up at 20.0%		**$38,367**
					Original Construction Cost		**$230,199**
Date of Original Estimate: 11/5/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$230,199**
					Professional Fees at 16.0%		**$36,832**
					TOTAL PROJECT COST		**$267,031**

All costs shown as Present Value

D-STREET PAVING RENEWAL

Project Number:	RC00SI04	**Category Code:** SI1B	
Priority Sequence:	11		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	8/23/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

The asphalt pavement is in fair condition with extensive block cracking throughout and isolated areas of alligator cracking. To restore the pavement to good condition, cracks should be sealed with a polymer-modified asphalt and failing pavement areas should be repaired with full-depth patching. The pavement surface should be milled and overlaid to extend the life of the pavement.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Direct applied crack sealant for asphalt paving	SY	2,863	$1.25	$3,579	$1.31	$3,751	$7,329
Full-depth patching of asphalt pavement	SY	15	$28.67	$430	$35.84	$538	$968
Mill and overlay asphalt pavement	SY	2,863	$9.85	$28,201	$7.28	$20,843	$49,043
			Base Material/Labor Costs	**$32,209**		**$25,131**	
			Indexed Material/Labor Costs	**$32,016**		**$25,332**	**$57,348**
					Construction Mark Up at 20.0%		**$11,470**
					Original Construction Cost		**$68,817**
Date of Original Estimate:	8/23/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$68,817**
					Professional Fees at 16.0%		**$11,011**
					TOTAL PROJECT COST		**$79,828**

All costs shown as Present Value

PARKING LOT A PAVING RENEWAL

Project Number:	RC00SI05	**Category Code:** SI1B	
Priority Sequence:	12		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	8/23/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

The overall pavement condition is fair, with extensive block cracking and isolated areas of alligator cracking. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair the distressed areas with full-depth patching.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Direct applied crack sealant for asphalt pavement	SY	19,407	$1.25	$24,259	$1.31	$25,423	$49,682
Full-depth patching	SY	450	$28.67	$12,902	$35.84	$16,128	$29,030
Base Material/Labor Costs				**$37,160**		**$41,551**	
Indexed Material/Labor Costs				**$36,937**		**$41,884**	**$78,821**
Construction Mark Up at 20.0%							**$15,764**
Original Construction Cost							**$94,585**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$94,585**
Professional Fees at 16.0%							**$15,134**
TOTAL PROJECT COST							**$109,719**

All costs shown as Present Value

PARKING LOT C PAVING RENEWAL

Project Number:	RC00SI06	**Category Code:** SI1B	
Priority Sequence:	13		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	8/23/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

The asphalt pavement is in good to fair condition with extensive block cracking throughout and isolated areas of alligator cracking. The pavement was last sealed and restriped in about 2014. Cracks appear to have been sealed with the same material as the surface. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair failing areas with full-depth patching.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Direct applied crack sealant for asphalt pavement	SY	20,653	$1.25	$25,816	$1.31	$27,055	$52,872
Full-depth patching of asphalt pavement	SY	30	$28.67	$860	$35.84	$1,075	$1,935
			Base Material/Labor Costs	**$26,676**		**$28,131**	
			Indexed Material/Labor Costs	**$26,516**		**$28,356**	**$54,872**
					Construction Mark Up at 20.0%		**$10,974**
					Original Construction Cost		**$65,846**
Date of Original Estimate: 8/23/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$65,846**
					Professional Fees at 16.0%		**$10,535**
					TOTAL PROJECT COST		**$76,382**

All costs shown as Present Value

PARKING LOT D PAVING RENEWAL

Project Number:	RC00SI07	**Category Code:** SI1B	
Priority Sequence:	14		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	8/23/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

The pavement is in good condition, but has some longitudinal cracking throughout and isolated areas of block cracking. Prior to surface sealing, clean and seal the cracks using a polymer-modified asphalt.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Direct applied crack sealant for asphalt pavement	SY	10,247	$1.25	$12,809	$1.31	$13,424	$26,232
			Base Material/Labor Costs	**$12,809**		**$13,424**	
			Indexed Material/Labor Costs	**$12,732**		**$13,531**	**$26,263**
					Construction Mark Up at 20.0%		**$5,253**
					Original Construction Cost		**$31,515**
Date of Original Estimate: 8/23/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$31,515**
					Professional Fees at 16.0%		**$5,042**
					TOTAL PROJECT COST		**$36,558**

All costs shown as Present Value

PARKING LOT E PAVING

Project Number:	RC00SI08	**Category Code:** SI1B	
Priority Sequence:	15		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	ACCESS
Date Basis:	8/23/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

This parking lot should be paved with an asphalt surface to improve user safety. Concrete curbs and fixed drainage structures will be needed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construction of asphalt pavement	SY	4,611	$28.67	$132,197	$35.84	$165,258	$297,456
Concrete curb and gutter construction	LF	2,100	$6.70	$14,070	$13.40	$28,140	$42,210
			Base Material/Labor Costs	**$146,267**		**$193,398**	
			Indexed Material/Labor Costs	**$145,390**		**$194,945**	**$340,335**
					Construction Mark Up at 20.0%		**$68,067**
					Original Construction Cost		**$408,402**
Date of Original Estimate: 8/23/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$408,402**
					Professional Fees at 16.0%		**$65,344**
					TOTAL PROJECT COST		**$473,747**

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SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			ROADS & PKG LOTS	54	EA	$237,722	1980	40	10	2030
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			SITE & PKG LOTS	5	EA	$22,011	2015	40		2055
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE & PKG LOTS	67	EA	$130,489	2005	40		2045
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE & PKG LOTS	17	EA	$33,109	2015	40		2055
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE & PKG LOTS	67	EA	$293,461	2005	20		2025
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			ROADS & PKG LOTS	61	EA	$267,181	2010	20	-3	2027
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			ROADS & PKG LOTS	18	EA	$78,512	2015	20		2035
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			SITE & PKG LOTS	22	EA	$95,959	2015	20		2035
SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE			BUS LOOP	285	LF	$1,855	2016	7		2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT A	19,407	SY	$76,597	1976	7	39	2022
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT B	475	SY	$1,875	2015	7	2	2024
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT C	20,653	SY	$81,515	1980	7	34	2021
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			LOT D	10,247	SY	$40,444	1995	7	21	2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			UNPAVED LOT E	4,615	SY	$18,215	2019	7	2	2028
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			MAIN STREET	12,740	SY	$50,283	1976	7	44	2027

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			D STREET	2,864	SY	$11,304	1980	7	40	2027
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			WEST ACCESS RD	3,349	SY	$13,218	2016	7		2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	TAXIWAY		HANGER	3,521	SY	$13,897	1976	7		DR
FH01	FIRE HYDRANT	FIRE HYDRANT			10	EA	$106,383	1995	65		2060
PF16	DUCTILE IRON PIPE - 12" DIAMETER	WATER MAIN			1,800	LF	$381,747	1976	75	-30	2021
PF05	CAST IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE			1,200	LF	$267,558	1976	50		2026
PF05	CAST IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE			3,300	LF	$735,785	1995	50		2045
PF05	CAST IRON PIPE - 6" DIAMETER	FARM WATER SUPPLY PIPE			1,600	LF	$356,744	1980	50	-10	2020
SA11	DUCTILE IRON PIPE - 8" DIAMETER	SANITARY SEWER PIPE			1,200	LF	$284,494	1976	50	5	2031
SA11	DUCTILE IRON PIPE - 8" DIAMETER	SANITARY SEWER PIPE			5,000	LF	$1,185,392	1995	50		2045
SA19	VITRIFIED CLAY PIPE - 6" PIPE	ASBESTOS CEMENT WATER PIPE			1,000	LF	$386,617	1976	75		2051
SA36	CONCRETE MANHOLE - 10 TO 15 FT DEEP	SANITARY SEWER MANHOLE			6	EA	$61,394	1976	100		2076
SA36	CONCRETE MANHOLE - 10 TO 15 FT DEEP	SANITARY SEWER MANHOLE			10	EA	$102,323	1995	100		2095
SD30	CORRUGATED METAL PIPE - 12" DIAMETER	8 TO 12 INCH CMP			2,180	LF	$534,031	1976	45		2021

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SD30	CORRUGATED METAL PIPE - 12" DIAMETER	STORM DRAIN PIPE			2,180	LF	$534,031	1976	45		2021
SD30	CORRUGATED METAL PIPE - 12" DIAMETER	STORM DRAIN PIPE			1,080	LF	$264,566	1995	45		2040
SD30	CORRUGATED METAL PIPE - 12" DIAMETER	SANITARY SEWER MAIN			1,800	LF	$440,943	1976	45		2021
SD32	CORRUGATED METAL PIPE - 18" DIAMETER	STORM DRAIN PIPE			875	LF	$226,529	1995	45		2040
SD33	CORRUGATED METAL PIPE - 24" DIAMETER	21 TO 24 INCH STORM DRAIN PIPE			1,985	LF	$556,138	1976	45		2021
SD33	CORRUGATED METAL PIPE - 24" DIAMETER	21 TO 24 INCH STORM DRAIN PIPE			1,140	LF	$319,394	1995	45		2040
SD34	CORRUGATED METAL PIPE - 30" DIAMETER	STORM DRAIN PIPE			305	LF	$87,373	1976	45		2021
SD37	PVC PIPE - 8" DIAMETER	4 TO 6 INCH STORM DRAIN PIPE			1,300	LF	$269,255	1995	50		2045
SD38	PVC PIPE - 12" DIAMETER	10 TO 12 INCH STORM DRAIN PIPE			125	LF	$28,676	1995	50		2045
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	CATCH BASIN			75	EA	$242,389	1976	100		2076
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	CATCH BASINS			20	EA	$64,637	1995	100		2095
SD63	CONCRETE MANHOLE - 5 TO 10 FT DEEP	STORM SEWER MANHOLE			25	EA	$170,903	1976	100		2076
SD63	CONCRETE MANHOLE - 5 TO 10 FT DEEP	STORM SEWER MANHOLE			5	EA	$34,181	1995	100		2095

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$9,109,128				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	TAXIWAY	3,521	SY	$13,897	DR
				TOTAL DEFERRED RENEWAL COST	$13,897	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	TAXIWAY	3,521	SY	$13,897	2018
	2018			PROJECTED COMPONENT REPLACEMENT COST	$13,897	

No Projected Component Replacement Cost for Asset No. RC00 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G3020	CAST IRON PIPE - 6" DIAMETER	FARM WATER SUPPLY PIPE	1,600	LF	$378,470	2020
	2020			PROJECTED COMPONENT REPLACEMENT COST	$378,470	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		20,653	SY	$89,074	2021
G3030	CORRUGATED METAL PIPE - 12" DIAMETER	8 TO 12 INCH CMP	2,180	LF	$583,550	2021
G3030	CORRUGATED METAL PIPE - 12" DIAMETER	STORM DRAIN PIPE	2,180	LF	$583,550	2021
G3030	CORRUGATED METAL PIPE - 24" DIAMETER	21 TO 24 INCH STORM DRAIN PIPE	1,985	LF	$607,707	2021
G3030	CORRUGATED METAL PIPE - 30" DIAMETER	STORM DRAIN PIPE	305	LF	$95,474	2021
G3030	CORRUGATED METAL PIPE - 12" DIAMETER	SANITARY SEWER MAIN	1,800	LF	$481,830	2021
G3010	DUCTILE IRON PIPE - 12" DIAMETER	WATER MAIN	1,800	LF	$417,145	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$2,858,330	

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		19,407	SY	$86,211	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$86,211	

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		10,247	SY	$46,885	2023
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,349	SY	$15,323	2023

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

G2010	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE		285	LF	$2,150	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$64,359**	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		475	SY	$2,239	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$2,239**	

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		67	EA	$360,920	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$360,920**	

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G3020	CAST IRON PIPE - 6" DIAMETER	WATER SUPPLY PIPE	1,200	LF	$338,935	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$338,935**	

2027

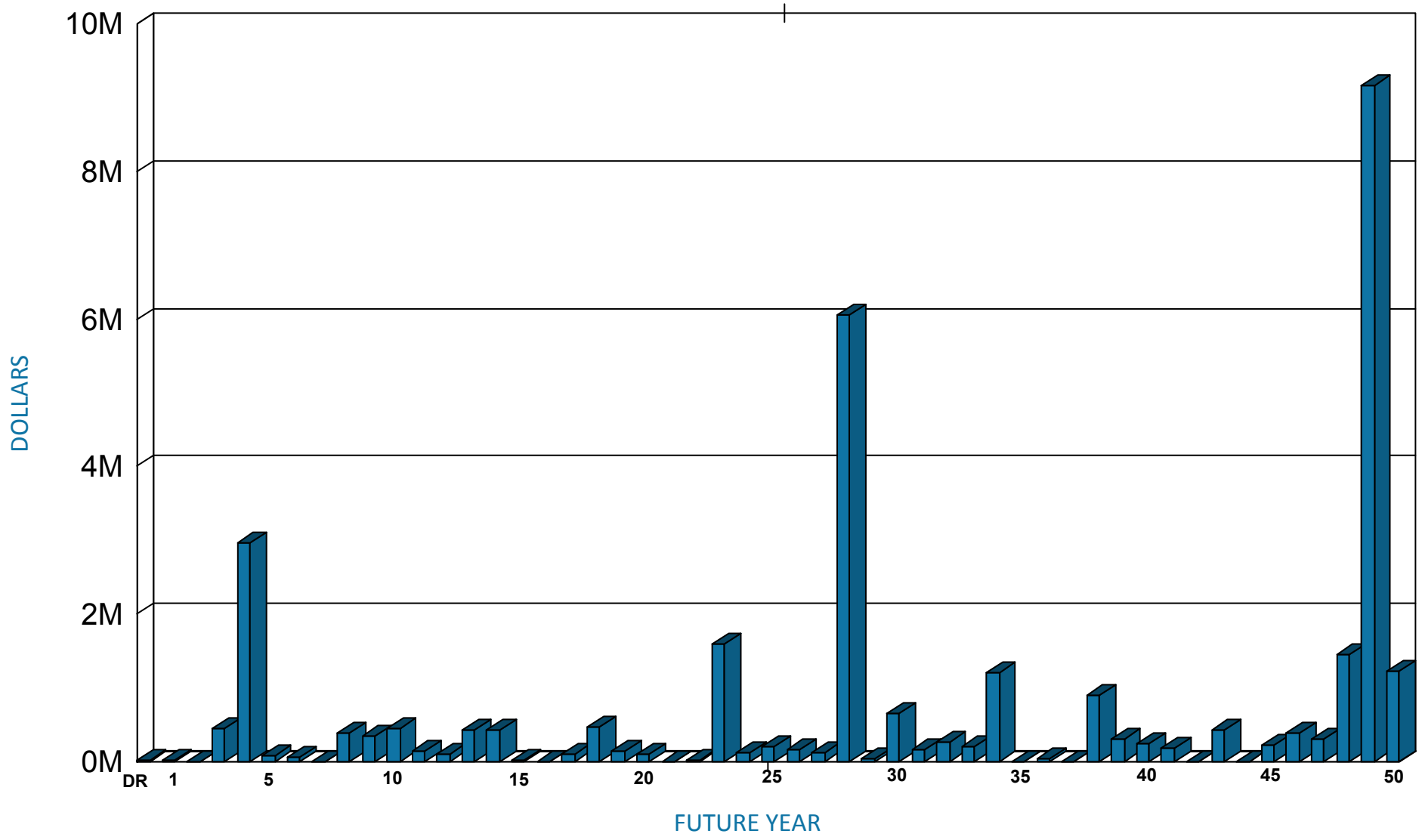
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		12,740	SY	$65,608	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		2,864	SY	$14,749	2027
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		61	EA	$348,610	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$428,968**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $0.38

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SECTION 5

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RC00001a 8/23/2018

Campus entrance sign

NW Springville Road

RC00002a 8/23/2018

Main entrance from NW Springville Road with block cracking

Main Street

RC00003a 8/23/2018

Main entrance roadway looking north with longitudinal and block cracking

Main Street

RC00004a 8/23/2018

Speed hump with longitudinal cracking

Main Street

RC00005a 8/23/2018

Alligator cracking

Main Street

RC00006a 8/23/2018

Block cracking, alligator cracking, and rutting

Main Street

RC00007a 8/23/2018
Speed hump with block cracking
Main Street

RC00008a 8/23/2018
Side lane for parking permits
Main Street

RC00009a 8/23/2018
Main Street, northeast section with overlain pavement
Main Street

RC00010a 8/23/2018
Overlain pavement leading to Parking Lot A
Main Street

RC00011a 8/23/2018
Overlain pavement at entrance to Parking Lot A
Main Street

RC00012a 8/23/2018
Circle at end of Main Street, northeast section
Main Street

RC00013a 8/23/2018
Main intersection at split with block cracking
Main Street

RC00014a 8/23/2018
Block cracking and parallel parking at western section
Main Street

RC00015a 8/23/2018
End of roadway at intersection with D-Street with block cracking
Main Street

RC00016a 8/23/2018
Block cracking and faded parallel parking markings
D-Street

RC00017a 8/23/2018
Longitudinal cracking and block cracking
D-Street

RC00018a 8/23/2018
Speed hump with block cracking
D-Street

RC00019a 8/23/2018
Minor block cracking at north end of roadway
D-Street

RC00020a 8/23/2018
Block cracking and past repairs
D-Street

RC00021a 8/23/2018
Electric or hybrid vehicle parking area
Parking Lot A

RC00022a 8/23/2018
Drive lane in front of Washington County Museum with longitudinal cracking
Parking Lot A

RC00023a 8/23/2018
Utility cuts and grass growing in cracks
Parking Lot A

RC00024a 8/23/2018
Block cracking and depression at storm inlet
Parking Lot A

RC00025a 8/23/2018
East drive lane, looking north
Parking Lot A

RC00026a 8/23/2018
Drive lane and parking stalls with block cracking
Parking Lot A

RC00027a 8/23/2018
Block cracking and surface wear
Parking Lot A

RC00028a 8/23/2018
Alligator cracking at west drive lane
Parking Lot A

RC00029a 8/23/2018
Entrance drive from Main Street
Parking Lot A

RC00030a 8/23/2018
Drive lane looking east with block cracking
Parking Lot A

RC00031a 8/23/2018

Block cracking and vegetation in cracks

Parking Lot A

RC00032a 8/23/2018

Parallel parking space in drive

Parking Lot A

RC00033a 8/23/2018

Asphalt overlay in drive lane and surface wear in parking stalls

Parking Lot A

RC00034a 8/23/2018

New asphalt parking lot

Parking Lot B

RC00035a 8/23/2018

Asphalt pavement that is seal coated and has block cracking

Parking Lot C

RC00036a 8/23/2018

Vegetation growing from previously sealed cracks

Parking Lot C

RC00037a 8/23/2018
Block cracking in drive lane
Parking Lot C

RC00038a 8/23/2018
Main drive, looking south
Parking Lot C

RC00039a 8/23/2018
Alligator cracking in main drive
Parking Lot C

RC00040a 8/23/2018
Entrance from D-Street
Parking Lot C

RC00041a 8/23/2018
Drive lane with block cracking and concrete sidewalk
Parking Lot C

RC00042a 8/23/2018
Block cracking
Parking Lot C

RC00043a 8/23/2018
Previously sealed block cracks
Parking Lot C

RC00044a 8/23/2018
Patching and block cracking
Parking Lot C

RC00045a 8/23/2018
Alligator cracking
Parking Lot C

RC00046a 8/23/2018
Grass growing in crack
Parking Lot C

RC00047a 8/23/2018
North drive and parking lane
Parking Lot D

RC00048a 8/23/2018
Typical parking and drive with asphalt pavement
Parking Lot D

RC00049a 8/23/2018
Longitudinal cracking
Parking Lot D

RC00050a 8/23/2018
West drive lane
Parking Lot D

RC00051a 8/23/2018
Typical parking and drive with asphalt pavement
Parking Lot D

RC00052a 8/23/2018
General view of parking lot, looking south
Parking Lot D

RC00053a 8/23/2018
Block cracking
Parking Lot D

RC00054a 8/23/2018
Longitudinal cracking
Parking Lot D

RC00055a 8/23/2018
Gravel-surfaced parking lot and no curbs at perimeter
Parking Lot E

RC00056a 8/23/2018
Gravel-surfaced parking lot and entrance from Main Street
Parking Lot E

RC00057a 8/23/2018
Gravel-surfaced parking lot with bumper blocks at parking stalls
Parking Lot E

RC00058a 8/23/2018
Start of west entrance road, north of D-Street
West Access Road

RC00059a 8/23/2018
Two-lane asphalt road and asphalt walkway
West Access Road

RC00060a 8/23/2018
Cattle crossing
West Access Road

RC00061a 8/23/2018
Gates at entrance from NW 185th Avenue
West Access Road

RC00062a 8/23/2018
Bus loop entrance with block cracking
Bus Loop

RC00063a 8/23/2018
Bus loop asphalt pavement with block cracking
Bus Loop

RC00064a 8/23/2018
Concrete bus parking pavement at entrance plaza
Bus Loop

RC00065a 8/23/2018
Asphalt sidewalk from NW Springville Road
Main Street

RC00066a 8/23/2018
Asphalt sidewalk from NW Springville Road to main campus
Main Street

RC00067a 8/23/2018
Asphalt sidewalk from NW Springville Road to main campus
Main Street

RC00068a 8/23/2018
Concrete sidewalk, south side of bus loop island
Main Street

RC00069a 8/23/2018
Broad walkway through campus from circle at end of Main Street
Main Street

RC00070a 8/23/2018
Walkway from Parking Lot C to main campus
Parking Lot C

RC00071a 8/23/2018
Walkway from Parking Lot C to Building 7
Parking Lot C

RC00072a 8/23/2018
Asphalt walkway from main campus to Building 4
South of Parking Lot C

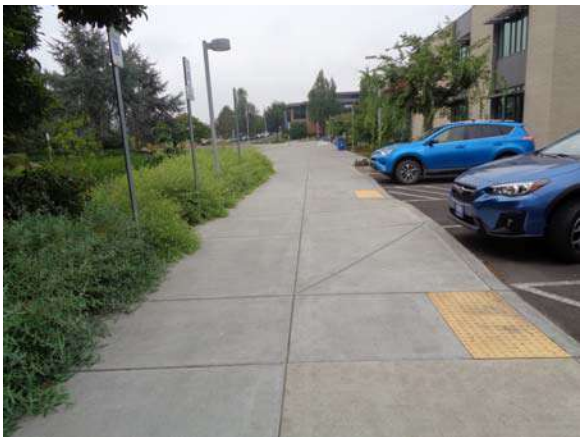
RC00073a 8/23/2018
Asphalt walkway from main campus to Building 4
South of Parking Lot C

RC00074a 8/23/2018
Concrete walkway from D-Street to Building 4 complex
West of D-Street

RC00075a 8/23/2018
Concrete sidewalk through parking lot
Parking Lot A

RC00076a 8/23/2018
Concrete sidewalk through parking lot
Parking Lot A

RC00077a 8/23/2018
Concrete walkway between Buildings 1 and 6
North of Parking Lot A



RC00078a 8/23/2018
Concrete walkway from Parking Lot B to entry plaza
South of Parking Lot B

RC00079a 8/23/2018
Concrete walkway at entry plaza
South of Building 5

RC00080a 8/23/2018
Concrete plaza at bus loop
South of Building 5

RC00081a 8/23/2018
North-south walkway plaza
West of Building 5

RC00082a 8/23/2018
North-south walkway plaza
East of Building 9

RC00083a 8/23/2018
Planters and seating areas in concrete plaza
North of Building 9

RC00084a 8/23/2018
Concrete walkways around grassed lawn
East of Building 7

RC00085a 8/23/2018
Concrete walkway adjacent to grassed lawn
South of Building 7

RC00086a 8/23/2018
Concrete walkway adjacent to Parking Lot C
West of Building 7

RC00087a 8/23/2018
Concrete walkway to center of campus
East of Building 7

RC00088a 8/23/2018
Concrete walkways in center of campus
Between Buildings 7 and 2

RC00089a 8/23/2018
Concrete walkway to Parking Lot C
North of Building 7

RC00090a 8/23/2018
Disintegrated granite paths and seating areas
South of Building 3

RC00091a 8/23/2018
Disintegrated granite paths and seating areas
South of Building 3

RC00092a 8/23/2018
Fountain plaza
Between Buildings 3 and 2

RC00093a 8/23/2018
Concrete and brick paver plaza
Between Buildings 2 and 5

RC00094a 8/23/2018
Concrete sidewalk
South of Building 1

RC00095a 8/23/2018
New pole-mounted LED light near campus entrance
Main Street

RC00096a 8/23/2018
Pole-mounted sodium vapor light
Main Street

RC00097a 8/23/2018
Pole-mounted lights, one sodium vapor and one LED
Main Street

RC00098a 8/23/2018
Pole-mounted LED light
Bus Loop

RC00099a 8/23/2018
Pole-mounted sodium vapor light
D-Street

RC00100a 8/23/2018
Pole-mounted sodium vapor light, 2 lamps per pole
Parking Lot C

RC00101a 8/23/2018
Pole-mounted LED light
Walkway from Building 7 to Building 4

RC00102a 8/23/2018
Pole-mounted sodium vapor light
Parking Lot D

RC00103a 8/23/2018
Pole-mounted sodium vapor light
Parking Lot D

RC00104a 8/23/2018
Pole-mounted sodium vapor light
Parking Lot A

RC00105a 8/23/2018
Pole-mounted LED light, 2 lamps per pole
Parking Lot A

RC00106a 8/23/2018
Pole-mounted sodium vapor light, 2 lamps per pole
Parking Lot A

RC00107a 8/23/2018
Pole-mounted sodium vapor light
Parking Lot B

RC00108a 8/23/2018
Pole-mounted compact fluorescent light
Entry plaza

RC00109a 8/23/2018
Pole-mounted compact fluorescent light
South of Building 3

RC00110a 8/23/2018
Pole-mounted LED light
Fountain plaza between Buildings 3 and 2

RC00111a 8/23/2018
TriMet bus stop at NW Springville Road without crosswalk and curb cuts not properly located
Main Street

RC00112a 8/23/2018
Noncompliant curb ramp, damaged concrete, and inadequate tactile warnings
Main Street at split

RC00113a 8/23/2018
Crosswalk not properly marked
Main Street at split

RC00114a 8/23/2018
Uneven asphalt sidewalk less than 6-feet wide and adjacent to roadway
Main Street

RC00115a 8/23/2018
Noncompliant curb ramp, damaged concrete, and inadequate tactile warnings
Main Street at Building 2

RC00116a 8/23/2018
Sidewalk crossing, faded crosswalk, curb ramp without tactile pads, and slope with no handrails
D-Street

RC00117a 8/23/2018
Curb ramp with inadequate tactile warnings
D-Street

RC00118a 8/23/2018
Smoking area without access ramps
Parking Lot C

RC00119a 8/23/2018
No designated access route from accessible parking
Parking Lot C

RC00120a 8/23/2018
Accessible parking area without designated access routes
Parking Lot C

RC00121a 8/23/2018
Accessible parking area
Parking Lot C

RC00122a 8/23/2018
Accessible parking area signs too low
Parking Lot C

RC00123a 8/23/2018
Noncompliant curb ramp and sidewalk with joint faulting
Parking Lot C

RC00124a 8/23/2018
Accessible parking spaces
Parking Lot D

RC00125a 8/23/2018
Accessible parking spaces and parallel curb ramp
Parking Lot A at Washington County Museum

RC00126a 8/23/2018
Accessible parking space not near building or access path
Parking Lot A

RC00127a 8/23/2018
Steps from parking lot creating tripping hazard
Parking Lot A at Main Street

RC00128a 8/23/2018
Crosswalk without curb ramp
Main Street from Parking Lot A

RC00129a 8/23/2018
Accessible parking and parallel curb ramps without tactile warnings
Main Street east of Building 5

RC00130a 8/23/2018
Accessible parking and no tactile warnings where sidewalk enters parking lot
Parking Lot A

RC00131a 8/23/2018
Accessible parking and noncompliant tactile warnings
Parking Lot A

RC00132a 8/23/2018
Accessible parking
Parking Lot B

RC00133a 8/23/2018
Accessible parking
Parking Lot B

RC00134a 8/23/2018
Tactile warning pad at curb ramp
Parking Lot B

RC00135a 8/23/2018
Faded crosswalk and curb ramps with tactile warnings
Main Street at Parking Lot B

RC00136a 8/23/2018
No tactile warnings at drop-off loop
Main Street, north loop

RC00137a 8/23/2018
Shallow drop inlet with some debris
Main Street

RC00138a 8/23/2018
Drop inlet
West access road

RC00139a 8/23/2018
Storm sewer manhole
West access road

RC00140a 8/23/2018
Storm sewer manhole
Parking Lot C

RC00141a 8/23/2018
Shallow drop inlet
Parking Lot C

RC00142a 8/23/2018
Shallow drop inlet with vegetation growth
Parking Lot C

RC00143a 8/23/2018
Shallow drop inlet with debris
Parking Lot D

RC00144a 8/23/2018
Shallow drop inlet with vegetation growth
Parking Lot A

RC00145a 8/23/2018

Shallow drop inlet

Parking Lot A

RC00146a 8/23/2018

Roof downspouts at north slope

Building 2

PORTLAND COMMUNITY COLLEGE

Southeast Campus

Facility Condition Assessment

Southeast Administration Building
Asset 4030

Inspected September 14, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

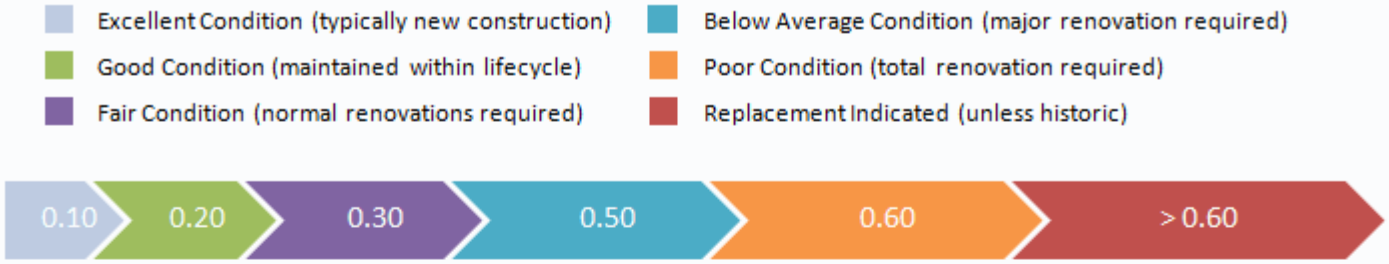
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

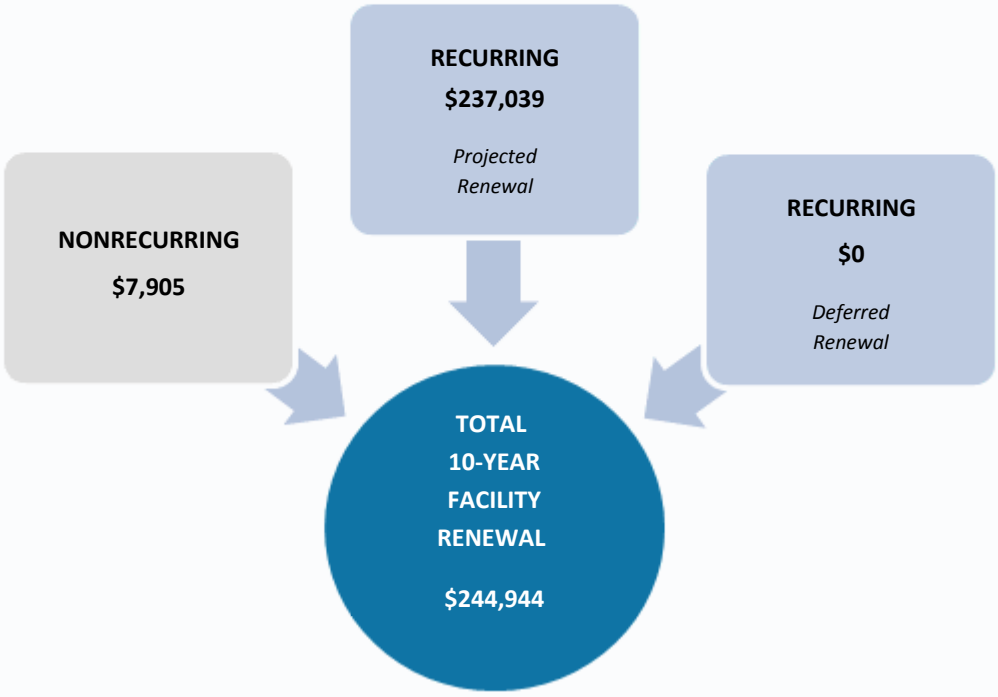
ASSET CODE	4030		
ASSET NAME	SOUTHEAST ADMINISTRATION BUILDING	**CURRENT REPLACEMENT VALUE**	$6,029,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.04
YEAR BUILT	1911	**FACILITY CONDITION INDEX**	0.00
GSF	13,561	**10-YEAR $/SF**	18.06
INSPECTION DATE	09/14/2018		

FCNI Scale

The FCNI for this asset is **0.04**



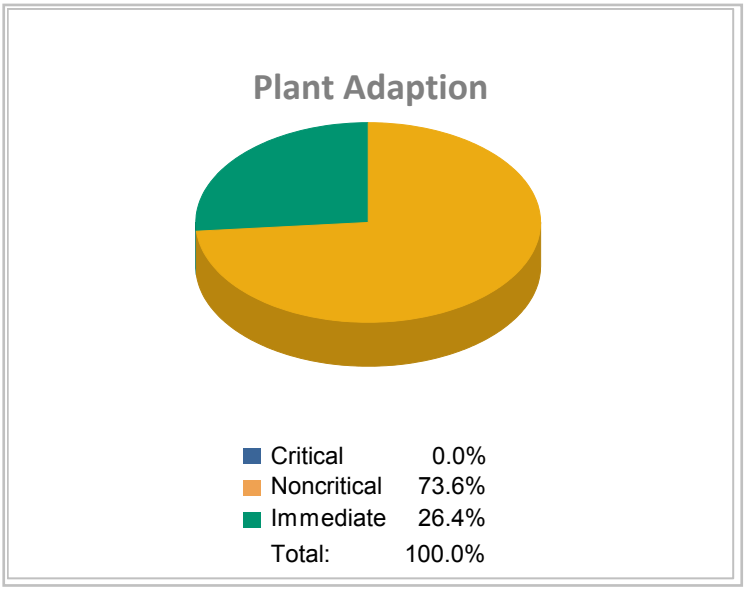
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

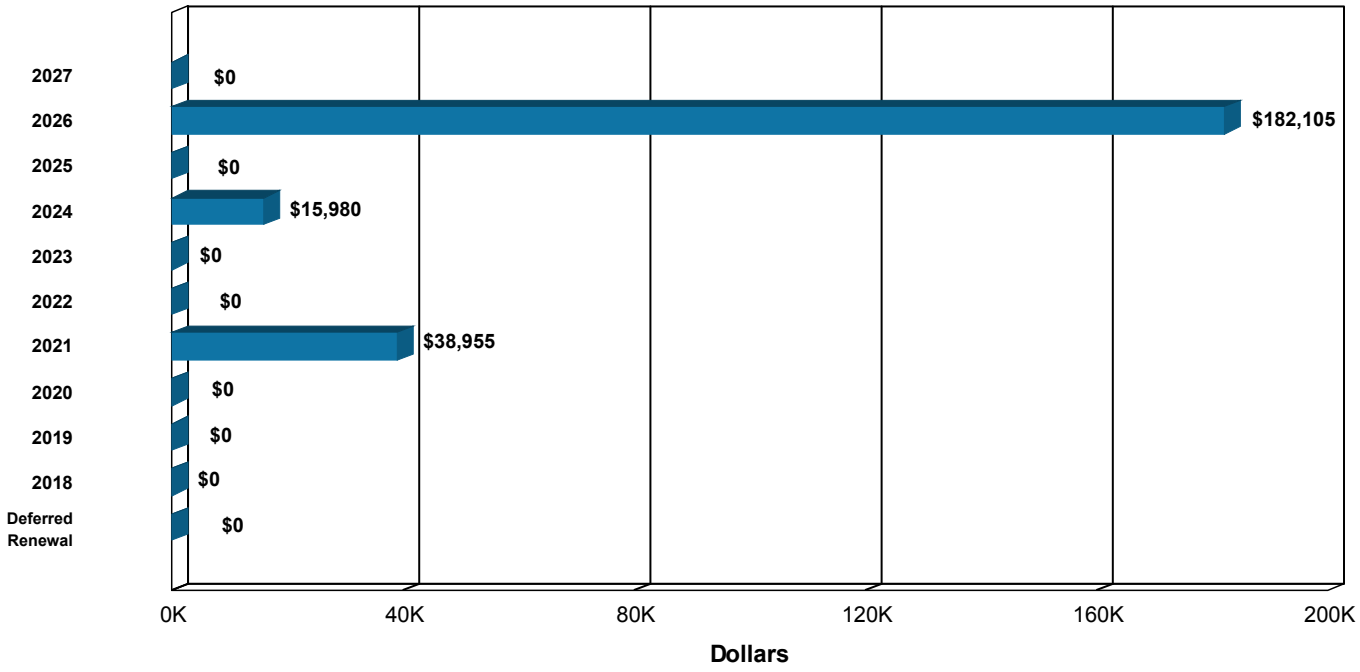
PLANT ADAPTION	
1 - Immediate	**$2,085**
2 - Critical	**$0**
3 - Noncritical	**$5,819**



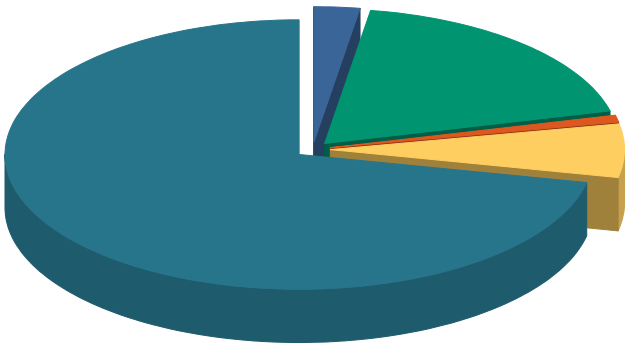
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$5,819	2%
Electrical	$0	0%
Exterior	$45,836	19%
Fire/Life Safety	$2,085	1%
Health	$0	0%
HVAC	$15,980	7%
Interiors	$175,223	72%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$244,944**	

ASSET SUMMARY

The Southeast Administration Building was constructed in 1911 as a home for German retirees and later as the headquarters of the German American Society. The 13,561 gross square foot, four-story building was acquired in 2011 by Portland Community College and extensively renovated in 2013. The facility now houses the administrative office for the Southeast campus. The building has a pitched, shingled roof and a porch along the south face of the building at the second level. The exterior is clad in brick and finished with painted wood trim.

Information for this report was gathered during a site visit conducted on September, 14, 2018.

Site

The Administration Building site is a relatively flat parcel on the north side of Southeast Division Street in Portland, Oregon. The building is south of the Community Hall Annex and surrounded by concrete pedestrian walkways which are in good condition. A small parking lot southeast of the building provides users and visitors with parking, in addition to the larger campus lots northeast of this building.

Exterior Structure

The main roof is covered by residential style asphalt shingles. The porch roof is an unballasted single-ply membrane and the porch floor is a liquid applied deck coating. All of these applications are in good condition and expected to last another ten years. The brick and stucco exterior walls are in good condition as are the wood shingles on the top floor. However, the painted wood trim at the windows, eaves, soffits, and the porch need to be painted in the very near future. The aluminum and glass and hollow-metal exterior doors are in good condition as are the hardwood and glass doors at the second floor entrance. However, the associated door hardware may need to be upgraded in the next ten years. The windows are wood-framed, insulating glass, double-hung units in generally good condition. As noted above, they are in need of painted trim.

Interior Finishes/Systems

Floor finishes include carpet, laminate flooring, and ceramic tile. The carpet should be replaced within the next ten years, but the other floor finishes should outlast the scope of this report. The interior walls are painted or ceramic tile. The painted walls are recommended for repainting within the next ten years, while the ceramic tile is in good condition with no recommendations. Ceilings are painted hard surfaces and suspended acoustical tile systems, all in good condition. The interior doors and casework are also in good condition and no work is recommended at this time.

Accessibility

This building was extensively renovated in 2013 in substantial compliance with the accessibility requirements at that time. The lower floor entrances are at grade level and one has a powered door opener. The door hardware and signage are compliant with accessibility standards, the restrooms provide the required accessible features, and the elevator has an accessible control panel. While some of the stairs have compliant railings, Stair 2 is deficient in handrail design relative to current standards which require that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Missing handrails and rails without proper extensions should be supplied and/or modified.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

This building has adequate exits, exit stairs, and exit access corridors. The exit pathways are clearly marked and of adequate size. Emergency lighting is provided by select overhead light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without maintaining fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system with the main panel in room BDF1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been recently upgraded. It has substantial remaining service life. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility utilizes ductless split systems with exterior condensing units charged with R410 DX refrigerant to provide cooling and electric heat. Distribution equipment consists of metal ductwork and wall-mounted electric heaters and the HVAC controls are a digital application. A fan coil unit serves a vestibule and two energy recovery units (ERU) are utilized by the system for energy conservation and ventilation. The system is in excellent condition and was operating properly during the site visit. The

HVAC system has remaining service life, but a partial upgrade of the controls may need to be considered on a low priority basis.

Electrical

Power is supplied via the adjacent facility at 120/208 volts to an 800 amp main panelboard that is in excellent condition. Additional panelboards receive the power for distribution and circuits are then energized for mechanical, lighting, and general purpose loads. The electrical system appears to be properly marked and encased. The equipment is in excellent condition and has substantial remaining service life.

The interior lighting consists of surface-mount and lay-in fixtures equipped with acrylic or no lenses and lamped with T8 fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. It should continue to serve the facility over the next ten years.

The exterior lighting consists of wall-mounted HID and non-HID fixtures. Additional lighting is provided by pole-mounted fixtures and the surrounding site. Although the inspection was performed during daylight hours the lighting scheme appears to provide adequate coverage with no recommendations.

Emergency power is provided by a Caterpillar diesel-fired generator that provides power at 120/208 volts and has a rated capacity of 100 kW. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears well maintained, is in good condition, and should continue to serve the facility over the next ten years.

Plumbing

Domestic water is supplied through a copper piping network and drain piping is cast-iron with no hub connections and some plastic applications. The piping systems appear to be in good condition and no issues were reported. The piping equipment has remaining service life beyond the scope of this report.

Domestic hot water is produced by an A.O. Smith commercial-grade, gas-fired water heater that has a tank capacity of 50 gallons. An expansion tank and small pump assist the water heater. The domestic water heating equipment is in excellent condition with no recommendations. A simplex sump pump is believed to serve the elevator pit and was installed in 2014. Based on age, it has remaining service life beyond the scope of this report.

The plumbing fixtures include drinking fountains, water closets, lavatories, kitchen sinks, and a utility sink. All of these fixtures are in good condition, are within their normal lifecycle, and should last another ten or more years.

Vertical Transportation

This four-story facility has a ThyssenKrupp hydraulic passenger elevator with a car capacity of 2,500 pounds and controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection. There are no recommendations for the vertical transportation equipment in this facility.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

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Date of Inspection

September 14, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	5,819	0	0	0	0	0	0	0	0	0	0	0	$5,819
EXTERIOR	0	0	0	0	0	0	0	38,955	0	0	0	0	6,882	0	$45,836
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	175,223	0	$175,223
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	0	15,980	0	0	0	$15,980
FIRE/LIFE SAFETY	2,085	0	0	0	0	0	0	0	0	0	0	0	0	0	$2,085
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$2,085	$0	$5,819	$0	$0	$0	$0	$38,955	$0	$0	$15,980	$0	$182,105	$0	$244,944
TOTAL NONRECURRING PROJECT NEEDS			$7,905	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$237,039	

CURRENT REPLACEMENT VALUE	$6,029,000
FACILITY CONDITION NEEDS INDEX	0.04
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
13,561	$244,944	$18.06

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$5,819	$0	$5,819
EXTERIOR	$0	$45,836	$45,836
INTERIOR	$0	$175,223	$175,223
PLUMBING	$0	$0	$0
HVAC	$0	$15,980	$15,980
FIRE/LIFE SAFETY	$2,085	$0	$2,085
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$7,905**	**$237,039**	**$244,944**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
4030FS01	FIRE RATING COMPROMISE	D4090	1	Plant Adaption	2,085
4030AC01	INTERIOR STAIR UPGRADES	C2020	3	Plant Adaption	5,819
				TOTAL	**$7,905**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4030	EF04	EXTERIOR DOOR OR WINDOW APPLIED FINISH				B2010	2021	31,081
4030	EF05	EXTERIOR TRIM APPLIED FINISH				B2010	2021	7,874
4030	BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				D3060	2024	10,586
4030	BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				D3060	2024	5,394
4030	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			ROOF	B2030	2026	946
4030	DR36	DOOR PANIC HARDWARE, EXTERIOR			MAIN ENTRY	B2030	2026	2,374
4030	DR36	DOOR PANIC HARDWARE, EXTERIOR			GROUND FLR	B2030	2026	3,561
4030	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	95,285
4030	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	79,938
							TOTAL	**$237,039**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	4030FS01	FIRE RATING COMPROMISE	1	$2,085
2	4030AC01	INTERIOR STAIR UPGRADES	3	$5,819
		TOTAL FOR PLANT ADAPTION		**$7,905**
		GRAND TOTAL:		**$7,905**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	4030AC01	3	Plant Adaption	INTERIOR STAIR UPGRADES	$5,819
				TOTAL FOR ACCESSIBILITY	**$5,819**
1	4030FS01	1	Plant Adaption	FIRE RATING COMPROMISE	$2,085
				TOTAL FOR FIRE/LIFE SAFETY	**$2,085**
				GRAND TOTAL:	**$7,905**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

FIRE RATING COMPROMISE

Project Number:	4030FS01	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	9/14/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	714.4	Not Applicable	Undefined: Floor(s) 1,2,3

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without maintaining fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	13,561	$0.03	$407	$0.08	$1,085	$1,492
Base Material/Labor Costs				**$407**		**$1,085**	
Indexed Material/Labor Costs				**$404**		**$1,094**	**$1,498**
Construction Mark Up at 20.0%							**$300**
Original Construction Cost							**$1,798**
Date of Original Estimate: 9/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,798**
Professional Fees at 16.0%							**$288**
TOTAL PROJECT COST							**$2,085**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	4030AC01	**Category Code:** AC3B	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/14/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,3,4
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	3	$729	$2,188	$663	$1,989	$4,178
Base Material/Labor Costs				**$2,188**		**$1,989**	
Indexed Material/Labor Costs				**$2,175**		**$2,005**	**$4,181**
Construction Mark Up at 20.0%							**$836**
Original Construction Cost							**$5,017**
Date of Original Estimate: 11/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,017**
Professional Fees at 16.0%							**$803**
TOTAL PROJECT COST							**$5,819**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EF04	EXTERIOR DOOR OR WINDOW APPLIED FINISH				60	EA	1.00	$31,081	2010	11		2021
EF05	EXTERIOR TRIM APPLIED FINISH				1,400	SF	1.00	$7,874	2010	11		2021
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				8,640	SF	1.27	$131,989	2014	30		2044
EW10	WALL, EXTERIOR, SHINGLE, WOOD				1,730	SF	1.27	$21,610	2014	40		2054
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				900	SF	1.00	$145,412	2013	40		2053
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			GROUND FLR	3	LEAF	1.00	$9,067	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			ROOF	1	LEAF	1.00	$2,007	2014	40		2054
DR09	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM			MAIN ENTRY	2	LEAF	1.00	$11,503	2014	35		2049
DR28	DOOR OPERATOR, POWER-ASSIST				1	EA	1.00	$6,770	2013	20		2033
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			ROOF	1	EA	1.00	$946	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR			MAIN ENTRY	2	EA	1.00	$2,374	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR			GROUND FLR	3	EA	1.00	$3,561	2014	12		2026
RR02	ROOF - FLUID APPLIED, TRAFFIC DECK (PVC SPRAYED)			PORCH FLR	600	SF	1.00	$8,877	2014	15		2029
RR03	ROOF - 1-PLY, UNBALLASTED			PORCH	600	SF	1.00	$7,101	2014	20		2034
RR12	ROOF - SHINGLE ASPHALT COMPOSITE, PREMIUM				4,000	SF	1.00	$44,988	2014	30		2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				10	LEAF	1.00	$22,114	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			30	LEAF	1.00	$110,056	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			8	LEAF	1.00	$29,348	2014	60		2074
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			10	EA	1.00	$7,529	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			30	EA	1.00	$22,587	2014	35		2049
DR26	DOOR PANIC HARDWARE, INTERIOR				8	EA	1.00	$9,496	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				36	LF	1.00	$20,192	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				34,140	SF	1.00	$95,285	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,800	SF	1.00	$72,903	2014	60		2074
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				6,710	SF	1.00	$79,938	2014	12		2026
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				1,220	SF	1.00	$43,025	2014	40		2054
IF12	FLOORING - LAMINATE PLANK, STANDARD				4,270	SF	1.00	$35,501	2014	25		2039
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				8,540	SF	1.00	$95,052	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				3,660	SF	1.00	$10,215	2014	24		2038
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	TK		M1-03	1	EA	1.00	$257,984	2014	25		2039

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	1.00	$2,694	2014	25		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				5	EA	1.00	$6,756	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN				3	EA	1.00	$2,318	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				1	EA	1.00	$1,664	2014	50		2064
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE				5	EA	1.00	$3,247	2014	35		2049
PS14	SUPPLY PIPING SYSTEM - OFFICE				13,561	SF	1.00	$56,105	2014	50		2064
TK06	EXPANSION TANK, STL PT (<20 GAL)	WATTS	0000004083	M1-01	5	GAL	1.00	$504	2014	30		2044
WH01	WATER HEATER - COMMERCIAL, GAS (<=87 MBH INPUT)	AO SMITH	0000004081	M1-01	76	MBH	1.00	$3,598	2014	25		2039
PD14	DRAIN PIPING SYSTEM - OFFICE				13,561	SF	1.00	$83,919	2014	60		2074
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			ELEV PIT	1	EA	1.00	$710	2014	20		2034
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	MITSUBISHI	0000004091	SITE	2	TON	1.00	$5,031	2014	25		2039
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	MITSUBISHI	0000004784	SITE	6	TON	1.00	$19,380	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	MITSUBISHI	0000004785	SITE	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	MITSUBISHI	0000004786	SITE	8	TON	1.00	$25,840	2014	20		2034
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	MITSUBISHI	0000004787	SITE	6	TON	1.00	$19,380	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU	0000004092	V1-1	1	HP	0.50	$4,441	2014	35		2049
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	LOSSNAY	0000004079	M1-01	1,200	CFM	1.00	$10,354	2014	25		2039
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	LOSSNAY	0000004080	M1-01	1,200	CFM	1.00	$10,354	2014	25		2039
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE				13,561	SF	1.00	$389,860	2014	45		2059
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT	0000006620	M1-01	1	HP	0.50	$846	2014	30		2044
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE				13,561	SF	1.00	$37,551	2014	20		2034
BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				13,561	SF	1.00	$10,586	2014	10		2024
BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				13,561	SF	1.00	$5,394	2014	10		2024
FS01	FIRE SPRINKLER SYSTEM - WET				13,561	SF	1.00	$183,462	2014	80		2094
FA01	FIRE ALARM SYSTEM - DEVICES				13,561	SF	1.00	$58,286	2014	18		2032
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		BDF1-01	1	EA	1.00	$2,254	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2014	18		2032
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE				13,561	SF	1.00	$300,373	2014	50		2064
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	MDP	0000006586	M1-02	800	AMP	0.15	$8,741	2014	40		2054
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	A			3	EA	1.00	$2,315	2010	20		2030

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			2	EA	1.00	$1,543	2014	20		2034
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	3	EA	1.00	$5,843	2014	40		2054
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	3	EA	1.00	$3,754	2014	20		2034
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				13,561	SF	1.00	$177,629	2014	20		2034
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				6,708	SF	1.00	$15,405	2014	20		2034
GN02	GENERATOR - DIESEL (<30-100KW)	CATERPILLAR	0000002406	SITE	100	KW	1.00	$97,658	2014	25		2039
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	ATS-OS1A	4085	M1-02	125	AMP	1.00	$3,412	2014	25		2039
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	ATS-LSIA	4086	M1-02	125	AMP	1.00	$3,412	2014	25		2039
							Grand Total:	**$2,950,699**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 4030 for DR

No Projected Component Replacement Cost for Asset No. 4030 for 2018

No Projected Component Replacement Cost for Asset No. 4030 for 2019

No Projected Component Replacement Cost for Asset No. 4030 for 2020

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	EXTERIOR DOOR OR WINDOW APPLIED FINISH		60	EA	$33,963	2021
B2010	EXTERIOR TRIM APPLIED FINISH		1,400	SF	$8,604	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$42,567	

No Projected Component Replacement Cost for Asset No. 4030 for 2022

No Projected Component Replacement Cost for Asset No. 4030 for 2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

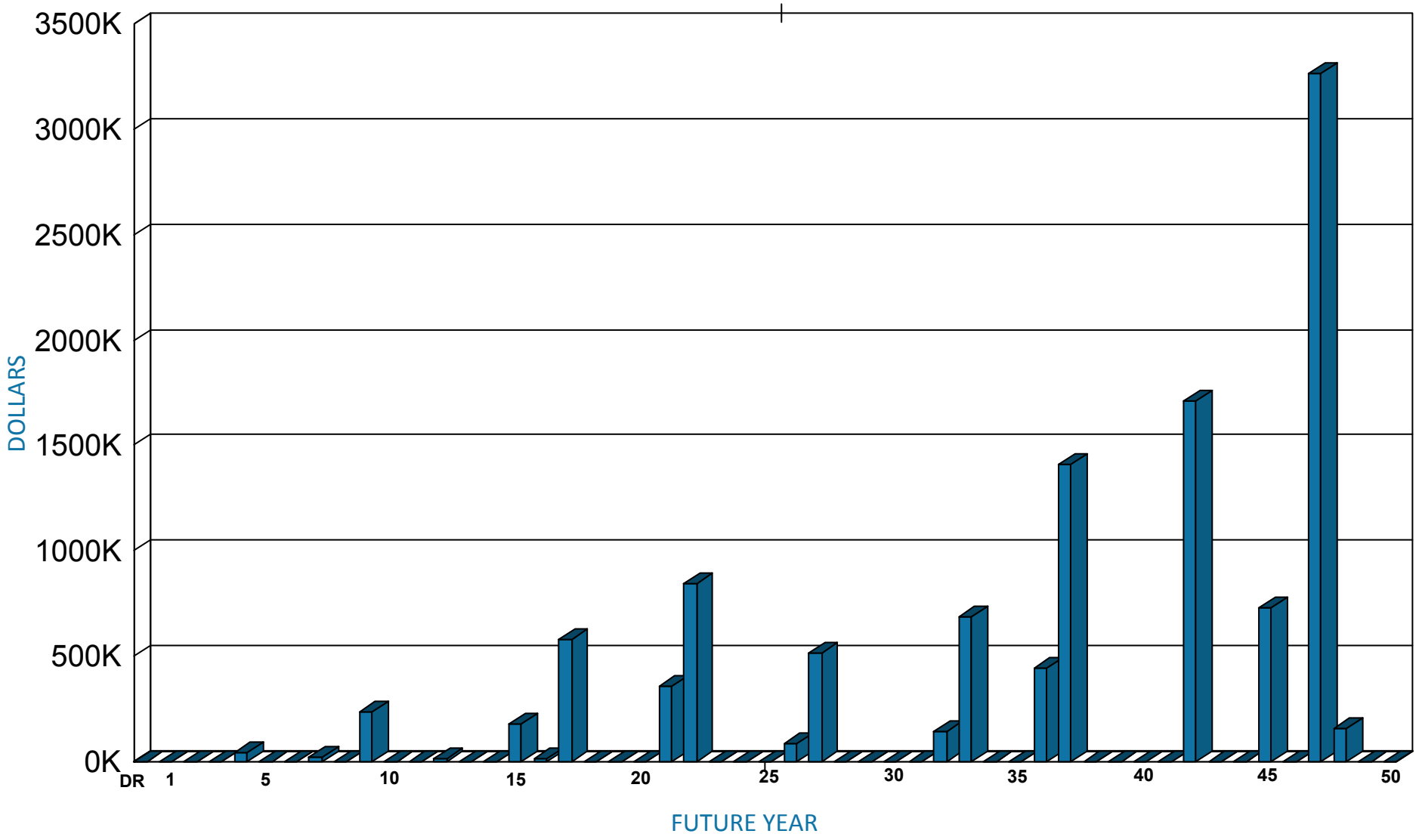
2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE		13,561	SF	$6,440	2024
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE		13,561	SF	$12,640	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$19,080	

No Projected Component Replacement Cost for Asset No. 4030 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		6,710	SF	$101,264	2026
C3010	WALL FINISH - APPLIED, STANDARD		34,140	SF	$120,704	2026
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		1	EA	$1,199	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		2	EA	$3,007	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		3	EA	$4,511	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$230,685	

No Projected Component Replacement Cost for Asset No. 4030 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $5.93

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

FS01

AC01

SOUTHEAST ADMINISTRATION BUILDING

BLDG NO. 4030

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 4

PORTLAND COMMUNITY COLLEGE

FS01

AC01

SOUTHEAST ADMINISTRATION BUILDING

BLDG NO. 4030

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

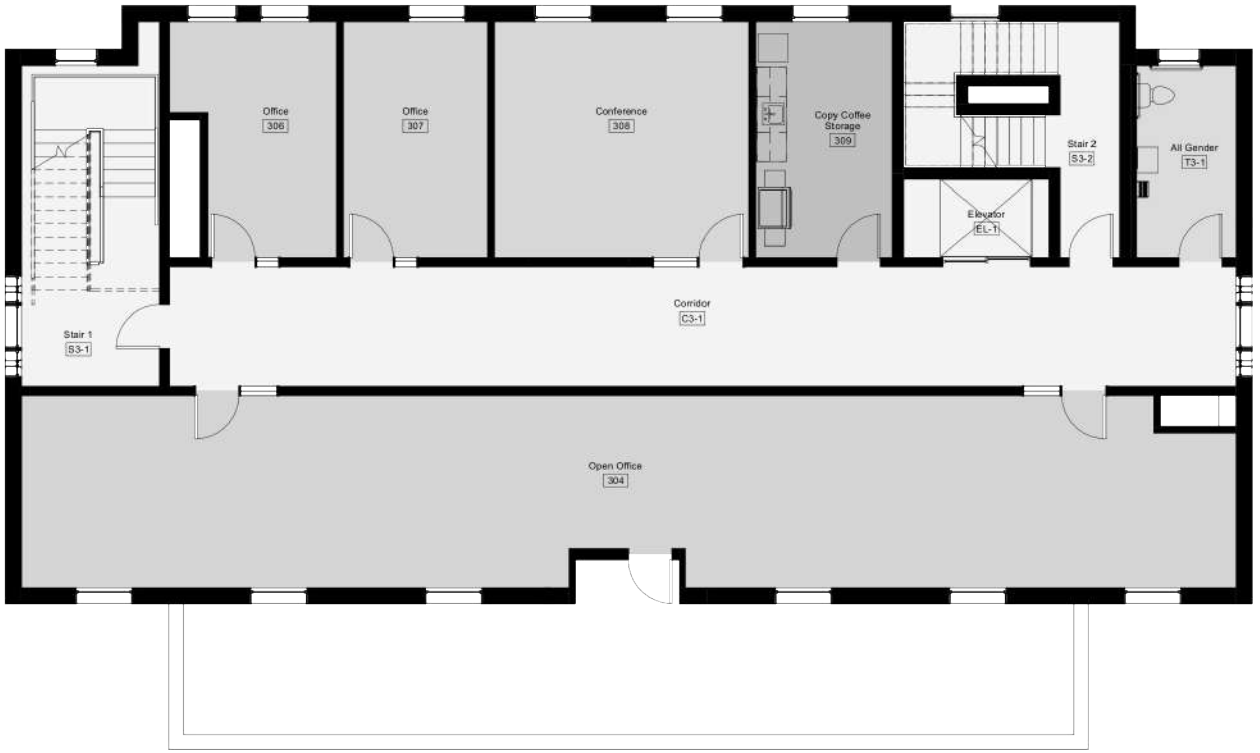
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 4

PORTLAND COMMUNITY COLLEGE



FS01

AC01

N

SOUTHEAST ADMINISTRATION BUILDING

BLDG NO. 4030

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 4

PORTLAND COMMUNITY COLLEGE

AC01

SOUTHEAST ADMINISTRATION BUILDING

BLDG NO. 4030

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FOURTH FLOOR PLAN

Sheet No.
4 of 4

SECTION 6

PHOTOGRAPHS

4030001a 9/14/2018
Accessible elevator control panel
Elevator

4030001e 9/14/2018
Car operating panel
Elevator cab

4030002a 9/14/2018
Accessible all-gender restroom water closet and accessories
Room T4-1

4030002e 9/14/2018
Strobe and occupancy sensor
Fourth floor, restroom

4030003a 9/14/2018
Lavatory and area finishes
Room T4-1

4030003e 9/14/2018
Sprinkler head
Fourth floor, room 403

4030004a 9/14/2018
Stair with noncompliant and missing handrails
Stair S4-2

4030004e 9/14/2018
Pull station and fire extinguisher
Fourth floor, room 403

4030005a 9/14/2018
Typical window units
Stair S4-2

4030005e 9/14/2018
Evaporator
Fourth floor, room 410

4030006a 9/14/2018
Break room casework and sink
Room 410

4030006e 9/14/2018
Drain piping
Fourth floor, room 410

4030007a 9/14/2018
Accessible room signage
Room 410

4030007e 9/14/2018
Digital thermostat
Fourth floor, room 410

4030008a 9/14/2018
Typical corridor finishes
Corridor C4-1

4030008e 9/14/2018
Interior lighting
Fourth floor, room 404

4030009a 9/14/2018
Stairwell door, hardware, and signage
Corridor C4-1

4030009e 9/14/2018
Panelboard
Fourth floor, room E4-01

4030010a 9/14/2018

Detail at a typical window unit noting exterior trim needs paint

Stair S4-1

4030010e 9/14/2018

Evaporator

Fourth floor, room E4-01

4030011a 9/14/2018

Unfirestopped penetration

Room IDF4-1

4030011e 9/14/2018

Strobe and occupancy sensor

Third floor, room 304

4030012a 9/14/2018

Stair with compliant railings

Stair S4-1

4030012e 9/14/2018

Interior lighting

Third floor, room 304

4030013a 9/14/2018
Linear drain and strainer
Porch roof

4030013e 9/14/2018
Evaporator
Third floor, room 308

4030014a 9/14/2018
Parapet cap and base flashing
Porch roof

4030014e 9/14/2018
Interior lighting
Second floor, corridor

4030015a 9/14/2018
Wood siding
South elevation

4030015e 9/14/2018
Annunciator
Second floor, corridor

4030016a 9/14/2018
Break room casework, sink, and area finishes
Room 309

4030016e 9/14/2018
Interior lighting
Second floor, room 202

4030017a 9/14/2018
Conference room finishes
Room 308

4030017e 9/14/2018
Electric heater and sprinkler piping
First floor, stairwell

4030018a 9/14/2018
Typical corridor finishes
Corridor C3-1

4030018e 9/14/2018
Fan coil unit
First floor, corridor

4030019a 9/14/2018
Accessible restroom fixtures and finishes
Room T3-1

4030019e 9/14/2018
Interior lighting
First floor, room 103

4030020a 9/14/2018
Office area finishes
Room 202

4030020e 9/14/2018
ATSs
First floor, room M1-02

4030021a 9/14/2018
Entrance doors, hardware, and signage
Vestibule 2-1

4030021e 9/14/2018
Transformers
First floor, room M1-02

4030022a 9/14/2018

Break area casework and finishes

Room 207

4030022e 9/14/2018

Water heater

First floor, room M1-01

4030023a 9/14/2018

Stair with compliant cane guard at the low overhead condition

Stair S2-1

4030023e 9/14/2018

Pump equipment

First floor, room M1-01

4030024a 9/14/2018

Typical fire-rated door label

Ground floor

4030024e 9/14/2018

Expansion tank

First floor, room M1-01

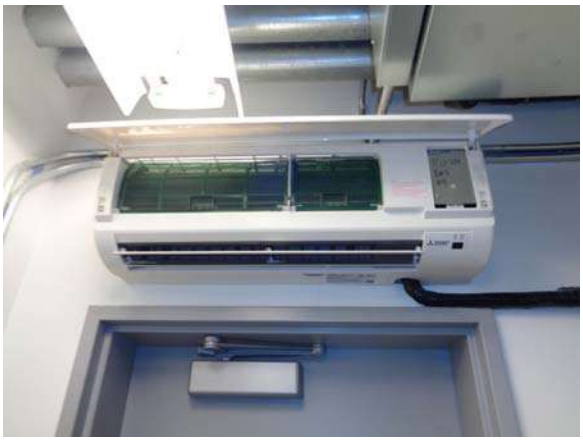
4030025a 9/14/2018
Corridor finishes
Corridor C1-1

4030025e 9/14/2018
Panelboard
First floor, room M1-01

4030026a 9/14/2018
Accessible drinking fountain
Corridor C1-1

4030026e 9/14/2018
Energy recovery unit
First floor, room M1-01

4030027a 9/14/2018
Classroom finishes
Room 103



4030027e 9/14/2018
Evaporator
First floor, room M1-01

4030028a 9/14/2018
Unfirestopped penetration
Room J1-1

4030028e 9/14/2018
Fire alarm panels
First floor, room BDF1-01

4030029a 9/14/2018
Accessible water closet, accessories, and finishes
Room T1-2

4030029e 9/14/2018
Interior lighting
First floor, room BDF1-01

4030030a 9/14/2018
Lavatory and area finishes
Room T1-2

4030030e 9/14/2018
Interior lighting
First floor, corridor

4030031a 9/14/2018

Utility sink

Room 109

4030031e 9/14/2018

Elevator machine and controller

First floor, room M1-03

4030032a 9/14/2018

Ground level entrance door

East elevation

4030032e 9/14/2018

Interior lighting

First floor, room M1-03

4030033a 9/14/2018

Exterior finishes and site condition

East elevation

4030033e 9/14/2018

Panelboard

First floor, room M1-03

4030034a 9/14/2018
Exterior finishes and site condition
East elevation

4030034e 9/14/2018
Evaporator and drain piping
First floor, room 109

4030035a 9/14/2018
Exterior finishes and site condition
South elevation

4030035e 9/14/2018
Condensing units
Site

4030036a 9/14/2018
Exterior finishes at the entrance porch
South elevation

4030036e 9/14/2018
Exterior lighting
East elevation

4030037a 9/14/2018
Exterior finishes and stair to the main entrance
South elevation

4030037e 9/14/2018
Exterior lighting
Site

4030038a 9/14/2018
Entrance steps with compliant handrails
South elevation

4030038e 9/14/2018
Exterior lighting
South elevation

4030039a 9/14/2018
Entrance porch finishes
South elevation

4030039e 9/14/2018
Exterior lighting
South elevation

4030040a 9/14/2018
Entrance porch ceiling and columns
South elevation

4030040e 9/14/2018
Exterior lighting
Site

4030041a 9/14/2018
Main entrance doors and trim
South elevation

4030042a 9/14/2018
Entrance porch floor and railings
South elevation

4030043a 9/14/2018
Entrance porch columns needing paint
South elevation

4030044a 9/14/2018
Grade level entrance door and area finishes
West elevation

4030045a 9/14/2018
Exterior finishes and site conditions
West elevation

4030046a 9/14/2018
Exterior finishes and site conditions
North elevation

4030047a 9/14/2018
Exterior finishes and site conditions
North elevation

4030048a 9/14/2018
Exterior finishes and site conditions
North elevation

4030049a 9/14/2018
Exterior finishes and site conditions
North elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	4030
Asset Name	Southeast Administration Building
Year Built or Last Energy Renovation	1911

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

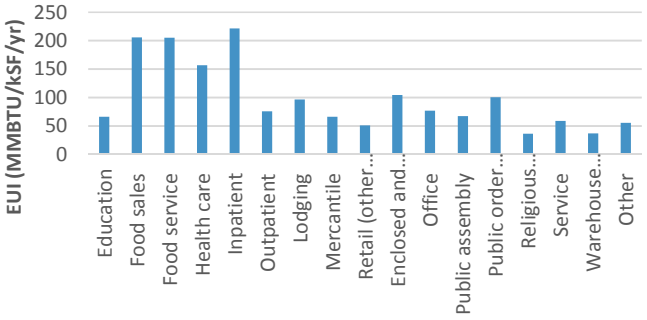
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	Pre-1960
Benchmark EUI (MMBTU/kSF/yr) =	**76.9**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 53.8
Energy Efficient (consumes 10% to 30% less energy)	53.8 <= EUI <= 69.2
Similar (consumes within 10% less or 10% more energy)	69.2 < EUI < 84.6
Energy Inefficient (consumes 10% to 30% more energy)	84.6 <= EUI <= 100
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 100

Figure 1. EUIs for Buildings Constructed/Renovated Pre-1960

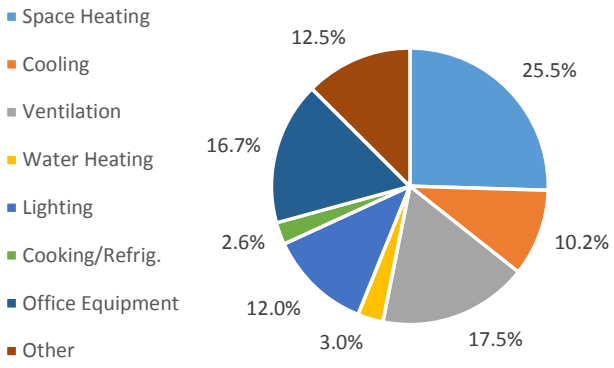


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	No ECM recommendation	

PORTLAND COMMUNITY COLLEGE

Southeast Campus

Facility Condition Assessment

Community Hall Annex
Asset 4003

Inspected September 14, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

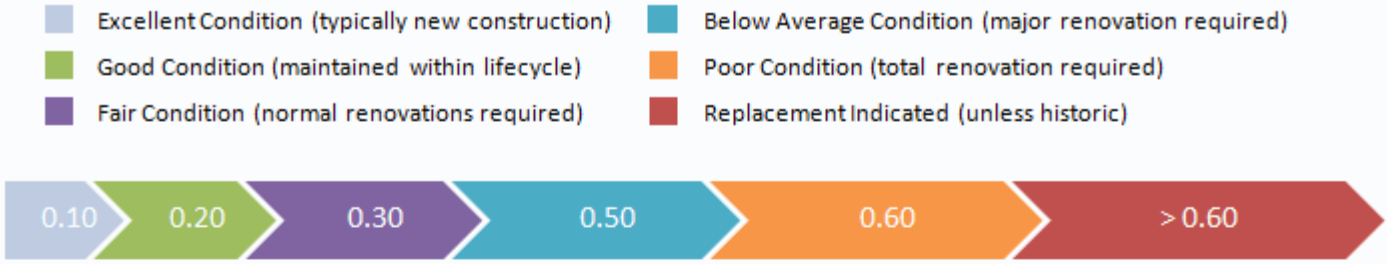
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

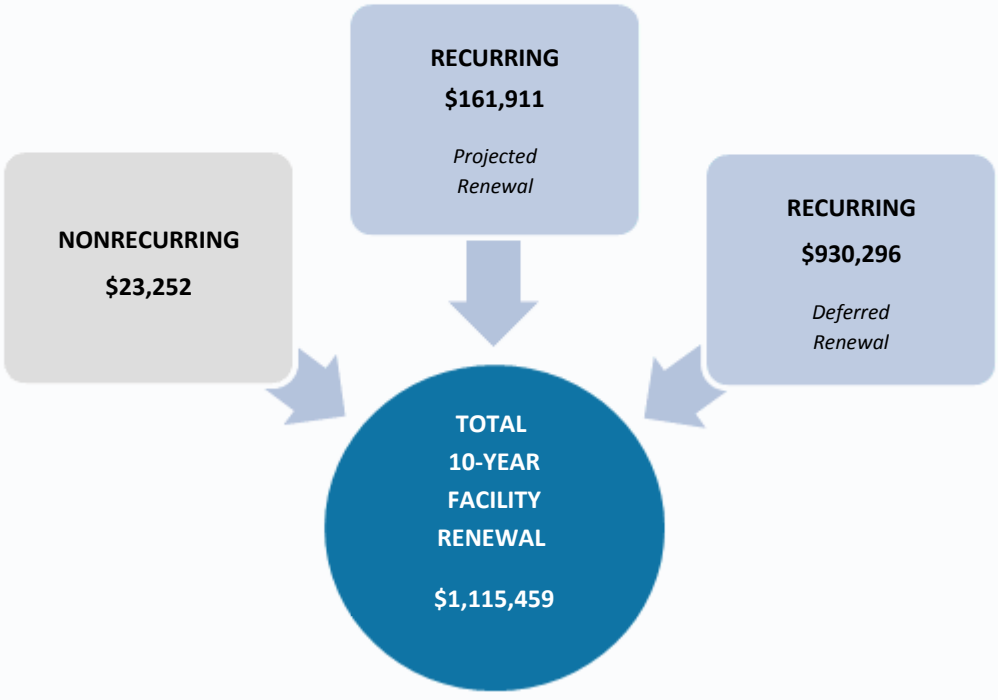
ASSET CODE	4003		
ASSET NAME	COMMUNITY HALL ANNEX	**CURRENT REPLACEMENT VALUE**	$6,900,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.16
YEAR BUILT	1972	**FACILITY CONDITION INDEX**	0.13
GSF	15,863	**10-YEAR $/SF**	70.32
INSPECTION DATE	09/14/2018		

FCNI Scale

The FCNI for this asset is **0.16**



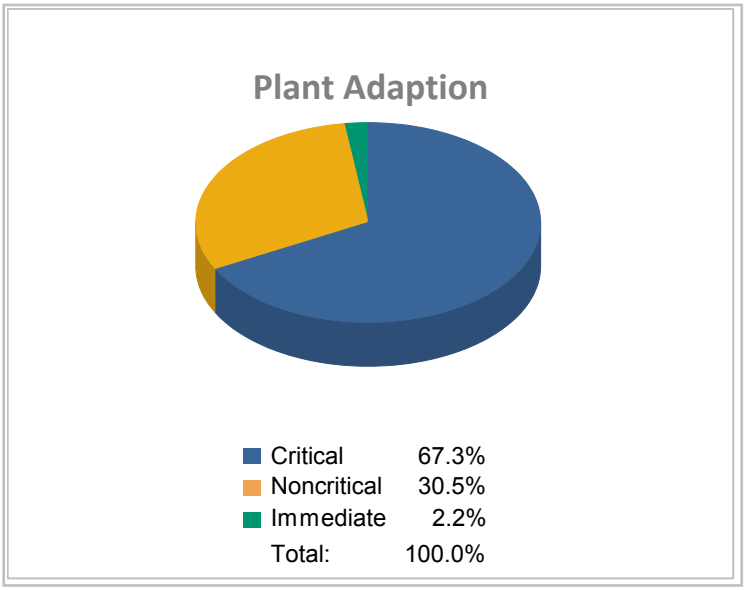
Total Facility Renewal Costs



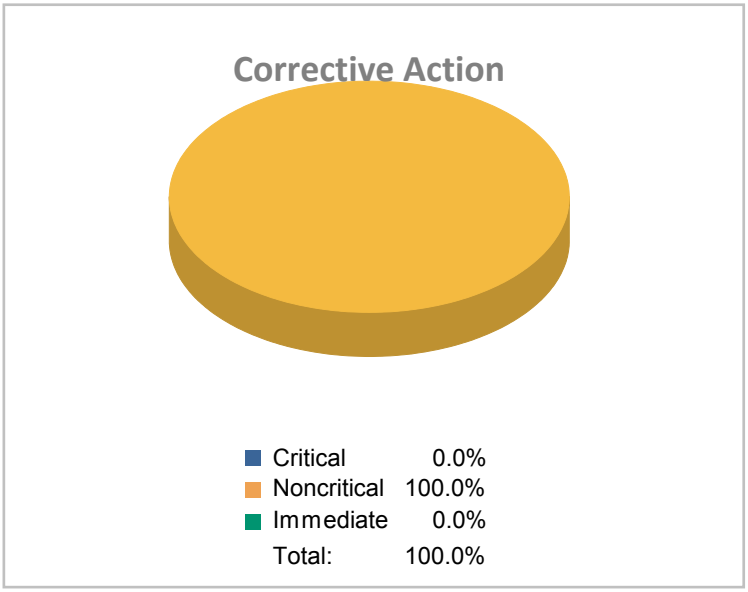
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$364**
2 - Critical	**$11,145**
3 - Noncritical	**$5,052**

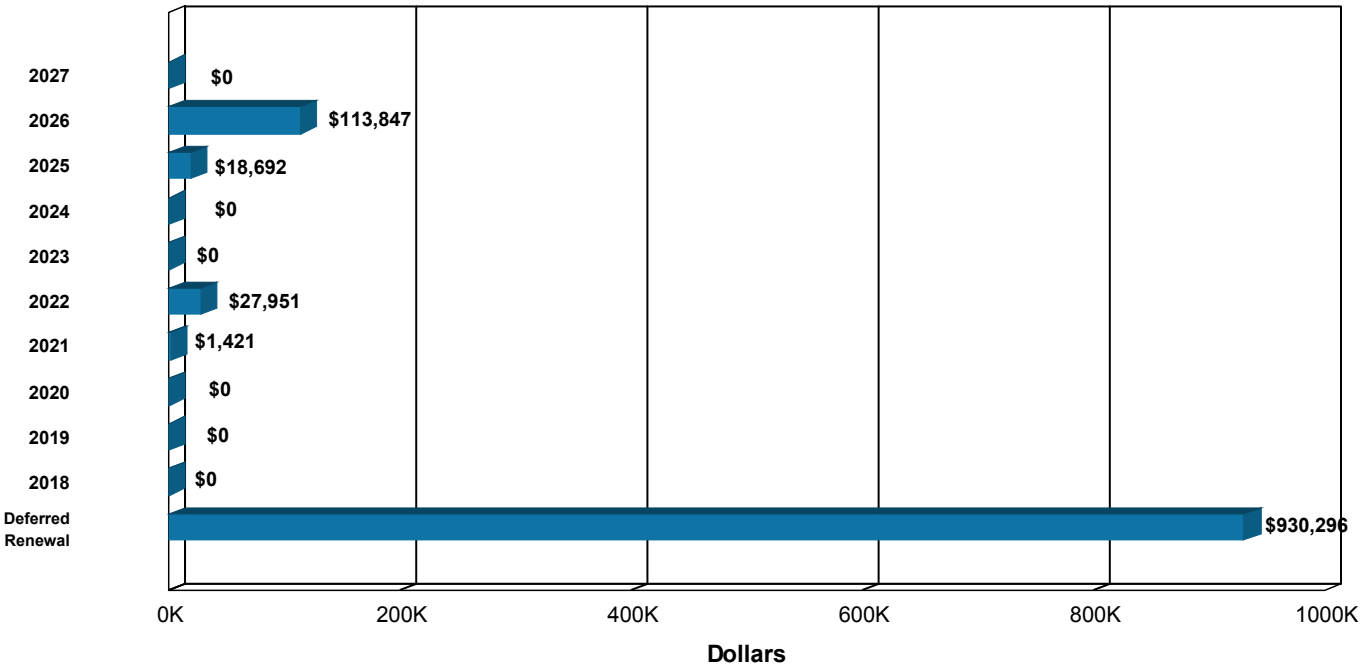


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$6,691**

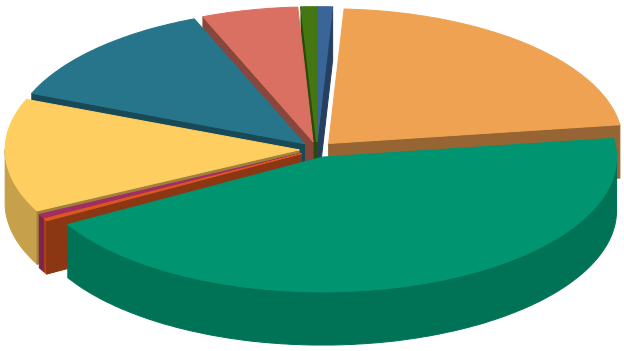


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$8,935	1%
Electrical	$245,113	22%
Exterior	$490,251	44%
Fire/Life Safety	$2,574	0%
Health	$5,052	0%
HVAC	$154,307	14%
Interiors	$142,475	13%
Plumbing	$58,640	5%
Site	$8,112	1%
Vert. Trans.	$0	0%
TOTAL	**$1,115,459**	

ASSET SUMMARY

The Community Hall Annex is located north of the Southeast Administration Building on the west side of the Portland Community College, Southeast campus. It is a 15,863 square-foot building constructed in 1972 and substantially renovated in 2014. The Annex houses support staff offices, a child care center, and provides meeting space for community activities in addition to various programs of the college.

Information for this report was gathered during a site visit conducted on September 14, 2018.

Site

The site is relatively flat and has extensive landscaping, which is in good condition. The concrete paving in the courtyard is in poor condition and should be replaced. Other pedestrian access is by way of concrete sidewalks that are in good condition. The east side of the building includes an asphalt-paved parking lot and service area. This paving is in good condition and should only require sealcoating in the next ten years. The child care play yard is fenced with chain link fencing that is in good condition.

Exterior Structure

The roof is substantially covered with residential-style asphalt shingles, with a small area of unballasted single-ply roofing at the top section of the center roof. The roof drains through a series of gutters and downspouts. The roofing as well as the gutter and downspout systems appear to be in good condition and should last another ten years. The exterior walls are brick veneer and in good condition. A 2014 renovation added wood slat accent walls that are also in good condition. The grounds maintenance shed on the property has T-111 style exterior walls which should outlast the scope of this report.

The exterior doors are aluminum and glass storefront and flush hollow-metal units. All of the doors appear to be in good condition. The overhead sectional door for the grounds building should also last another ten or more years. Window units include original, wood-framed fixed glass, and newer storefront systems. The original windows and the wood-framed window in the room 124 are recommended for replacement. The storefront systems are in good condition and should outlast the scope of this report.

Interior Finishes/Systems

Floor finishes include hardwood, carpet, vinyl tile, sheet vinyl, ceramic tile, and sealed concrete. The carpet, sheet vinyl and ceramic tile floors are new and in good condition. The vinyl tile is old and is recommended for replacement. The sealed concrete floors should be resealed within the next ten years. The original hardwood floors have been refinished and should outlast the scope of this report.

The interior walls are painted or ceramic tile. The ceramic tile is new and in good condition, but the painted walls should be repainted within the next ten years. Ceilings are painted hard surfaces, suspended acoustical tile, and attached or adhered acoustical tile systems. The adhered or attached systems should be replaced and are addressed in the Health section. The remainder of the ceilings are in good condition and with no recommendations. The interior doors and the casework throughout the building should all outlast the scope of this report.

Accessibility

Although this building was built before any accessibility legislation, the 2014 renovation removed most barriers to full accessibility. The doors are at grade level or reached by compliant ramps, most of the door hardware and room signage is compliant, restrooms provide the required features. and interior pathways and spaces provide accessible clearances. Remaining barriers to full accessibility noted during this site visit are noted below.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the stairs to the basement are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail design relative to current standards. Future renovation efforts should include stair railing upgrades.

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever-handle hardware be installed on all doors that still have knobs. In addition, the signage is not ADA compliant. It is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. Compliant signage should meet specific size, graphical, Braille, height, and location requirements.

Health

The commercial kitchen equipment is in good condition and should last beyond the next ten years.

Asbestos-containing materials (ACMs) are suspected to exist in the adhered acoustical tile ceilings. Prior to replacing these systems, the ACMs should be properly investigated and abated.

Fire/Life Safety

This building has adequate exits and exit access corridors. The exit pathways are clearly marked with illuminated exit signs. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility including various utility spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room MDF1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been recently upgraded. There are no recommendations for the equipment at this time. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two original air handling units (AHUs) in the basement are believed to serve common spaces. The units have an original, natural gas-fired boiler that produces heating hot water. An original expansion tank and a new pump provide support for the equipment. Most of the HVAC equipment in the basement has reached the end of its service life and is recommended for replacement.

The majority of the facility utilizes a heat pump system that incorporates wall-mounted or ceiling-mounted evaporators. Exterior condensing units charged with R410A DX refrigerant are utilized by the system. There are also three energy recovery units. Distribution equipment consists of refrigerant piping and flexible ductwork. Controls are a digital application that were recently upgraded. This HVAC equipment is new and in excellent condition. Based on industry standards, the equipment has substantial remaining service life. However, a partial control upgrade should be anticipated within the next ten years.

Facility exhaust is provided by ceiling-mounted odor fans and a wall-mounted propeller type fan. The fans serve restrooms, janitor’s closets, and an IT room. Most of the fans are new and in excellent condition. However, the wall-mounted unit is estimated to date to 1995 and has reached the end of its service life. Additionally, there is a hood in the kitchen. It is in adequate condition and has remaining service life.

Electrical

Power is supplied to the facility at 120/208 volts to the basement boiler room. A 600 amp, Square D main switchboard receives the power for distribution. The switchboard has reached the end of its service life and is recommended for replacement. The electrical distribution system consists of panelboards and a motor control center (MCC). Power is supplied by the equipment at 120/208 volts. While most of the electrical equipment is new and in excellent condition, the MCC is believed to be original. Based on industry standards it has reached lifecycle depletion. Additionally, a small remaining portion of the electrical distribution system is believed to be original and will reach the end of its service life within the scope of this report. The new equipment should continue to serve the facility beyond the scope of this report.

The interior lighting consists of surface-mounted fixtures equipped with acrylic or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by suspended single lamp fixtures and recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting is good condition and most is believed to have been replaced in 2015. Some original lighting still exists in the basement and has reached lifecycle depletion. The newer lighting has substantial remaining service life.

The exterior lighting consists of recessed eave-mounted non-HID and wall-mounted HID fixtures, with additional lighting provided by bollard style fixtures on the site from adjacent facilities. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, some of the exterior lighting may need to be scheduled for replacement due to lifecycle depletion.

Emergency power is provided by a district source. An automatic transfer switch (ATS) in the basement boiler room provides the power for distribution. The Cummins unit was installed in 2015, is in excellent condition, and should continue to serve the facility over the next ten years.

Plumbing

Domestic water is supplied through a copper piping network. A backflow preventer on the water systems prevents cross contamination. Drain piping is cast-iron with hub-and-spigot connections and plastic. The piping systems are in good condition and no issues were reported by the maintenance staff. It is believed that most of the piping equipment was replaced in 2015. However, some original piping may remain and the original supply piping will reach the end of its service life within the scope of this report.

Domestic hot water is provided by three commercial-grade electric water heaters installed at various times. One unit dates to 2002 and another was installed in 2015. These water heaters appear to be well maintained, in good condition, and have remaining service life beyond the scope of this report. The third, original unit is in the boiler room and has reached the end of its lifecycle. If still operational, it should be replaced. Pumps and an expansion tank are utilized by the water heaters. This equipment has remaining service life with no recommendations.

A simplex sump pump serves the basement boiler room in the event of a water mishap. The unit is estimated to date to 2010 and appears to be operational with no recommendations.

The plumbing fixtures include water closets, lavatories, a shower, kitchen sinks, and utility sinks. The original kitchen and utility sinks should be considered for replacement in the next few years. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

September 14, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	8,935	0	0	0	0	0	0	0	0	0	0	0	0	$8,935
EXTERIOR	0	0	0	487,877	0	0	0	0	0	0	0	0	2,374	0	$490,251
INTERIOR	0	0	0	31,002	0	0	0	0	0	0	0	0	111,473	0	$142,475
PLUMBING	0	0	0	52,838	0	0	0	0	5,802	0	0	0	0	0	$58,640
HVAC	0	0	0	135,615	0	0	0	0	0	0	0	18,692	0	0	$154,307
FIRE/LIFE SAFETY	364	2,211	0	0	0	0	0	0	0	0	0	0	0	0	$2,574
ELECTRICAL	0	0	0	222,963	0	0	0	0	22,150	0	0	0	0	0	$245,113
SITE	0	0	6,691	0	0	0	0	1,421	0	0	0	0	0	0	$8,112
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	5,052	0	0	0	0	0	0	0	0	0	0	0	$5,052
SUBTOTAL	$364	$11,145	$11,743	$930,296	$0	$0	$0	$1,421	$27,951	$0	$0	$18,692	$113,847	$0	$1,115,459
TOTAL NONRECURRING PROJECT NEEDS			$23,252	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,092,207	

CURRENT REPLACEMENT VALUE	$6,900,000
FACILITY CONDITION NEEDS INDEX	0.16
FACILITY CONDITION INDEX	0.13

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
15,863	$1,115,459	$70.32

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$8,935	$0	$8,935
EXTERIOR	$0	$490,251	$490,251
INTERIOR	$0	$142,475	$142,475
PLUMBING	$0	$58,640	$58,640
HVAC	$0	$154,307	$154,307
FIRE/LIFE SAFETY	$2,574	$0	$2,574
ELECTRICAL	$0	$245,113	$245,113
SITE	$6,691	$1,421	$8,112
VERT. TRANS	$0	$0	$0
HEALTH	$5,052	$0	$5,052
TOTALS	**$23,252**	**$1,092,207**	**$1,115,459**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
4003FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	364
4003FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	2,211
4003AC02	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	6,995
4003AC01	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	1,940
4003HE01	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	F2020	3	Plant Adaption	5,052
4003SI01	SITE PEDESTRIAN PAVING RENEWAL	G2030	3	Corrective Action	6,691
				TOTAL	**$23,252**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4003	EW08	WALL, EXTERIOR, SIDING, T-111 PLYWOOD	GROUNDS SHED			B2010	Deferred Renewal	17,834
4003	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	MAIN			B2020	Deferred Renewal	347,438
4003	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM			124	B2020	Deferred Renewal	122,605
4003	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				C3020	Deferred Renewal	4,886
4003	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	3,987
4003	IC03	CEILING FINISH - ATTACHED ACOUSTICAL TILE				C3030	Deferred Renewal	22,129
4003	FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL			D2010	Deferred Renewal	773
4003	WH18	WATER HEATER - COMMERCIAL, ELECTRIC (225-325 GAL)	NATIONAL	0000003349	M0-01	D2020	Deferred Renewal	52,066
4003	BL26	BOILER - GAS (800-1500 MBH)	NATIONAL	0000003347	M0-01	D3020	Deferred Renewal	52,171
4003	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU#5	0000003351	M0-01	D3040	Deferred Renewal	23,495
4003	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU#6	0000003352	M0-01	D3040	Deferred Renewal	23,495
4003	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ILG		MDF1-1	D3040	Deferred Renewal	2,726
4003	HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL			D3040	Deferred Renewal	28,749
4003	TK23	EXPANSION TANK, STL PT (50-450 GAL)			M0-01	D3040	Deferred Renewal	1,684
4003	HU48	EVAPORATIVE COOLER (>1/2 HP<=1 HP)	MAU-1	0000003367	ROOF	D3090	Deferred Renewal	3,295
4003	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC			D5010	Deferred Renewal	152,434
4003	SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SQ D		M0-01	D5010	Deferred Renewal	47,259

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4003	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			D5020	Deferred Renewal	10,171
4003	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	ORIGINAL			D5020	Deferred Renewal	13,099
4003	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			SERVICE LOT	G2020	2021	1,421
4003	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			D2010	2022	1,664
4003	PS14	SUPPLY PIPING SYSTEM - OFFICE	ORIGINAL			D2020	2022	4,137
4003	SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	ORIGINAL			D5010	2022	22,150
4003	BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				D3060	2025	12,383
4003	BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				D3060	2025	6,309
4003	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	2026	2,374
4003	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	111,473
							TOTAL	**$1,092,207**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
6	4003SI01	SITE PEDESTRIAN PAVING RENEWAL	3	$6,691
		TOTAL FOR CORRECTIVE ACTION		**$6,691**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	4003FS01	ELIMINATE FIRE RATING COMPROMISES	1	$364
2	4003FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$2,211
3	4003AC02	INTERIOR DOOR ACCESSIBILITY UPGRADES	2	$6,995
4	4003AC01	INTERIOR STAIR UPGRADES	2	$1,940
5	4003HE01	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	3	$5,052
		TOTAL FOR PLANT ADAPTION		**$16,561**
		GRAND TOTAL:		**$23,252**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	4003AC02	2	Plant Adaption	INTERIOR DOOR ACCESSIBILITY UPGRADES	$6,995
4	4003AC01	2	Plant Adaption	INTERIOR STAIR UPGRADES	$1,940
				TOTAL FOR ACCESSIBILITY	**$8,935**
1	4003FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$364
2	4003FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$2,211
				TOTAL FOR FIRE/LIFE SAFETY	**$2,574**
5	4003HE01	3	Plant Adaption	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	$5,052
				TOTAL FOR HEALTH	**$5,052**
6	4003SI01	3	Corrective Action	SITE PEDESTRIAN PAVING RENEWAL	$6,691
				TOTAL FOR SITE	**$6,691**
				GRAND TOTAL:	**$23,252**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	4003FS01
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	12/9/2018

Category Code: FS5C

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility including various utility spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	LOT	1	$60.00	$60	$200	$200	$260
Base Material/Labor Costs				**$60**		**$200**	
Indexed Material/Labor Costs				**$60**		**$202**	**$261**
Construction Mark Up at 20.0%							**$52**
Original Construction Cost							**$313**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$313**
Professional Fees at 16.0%							**$50**
TOTAL PROJECT COST							**$364**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	4003FS02	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/9/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	2	$304	$608	$488	$976	$1,584
Base Material/Labor Costs				**$608**		**$976**	
Indexed Material/Labor Costs				**$604**		**$984**	**$1,588**
Construction Mark Up at 20.0%							**$318**
Original Construction Cost							**$1,906**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,906**
Professional Fees at 16.0%							**$305**
TOTAL PROJECT COST							**$2,211**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	4003AC02
Priority Sequence:	3
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/20/2018

Category Code: AC3C

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4, 703.1	Not Applicable	Floor-wide: Floor(s) 1

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever-handle hardware be installed on all doors that still have knobs. In addition, the signage is not ADA compliant. It is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. Compliant signage should meet specific size, graphical, Braille, height, and location requirements.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	8	$67.64	$541	$19.89	$159	$700
ADA-compliant commercial-grade door hardware	EA	8	$387	$3,095	$155	$1,240	$4,335
			Base Material/Labor Costs	**$3,636**		**$1,399**	
			Indexed Material/Labor Costs	**$3,615**		**$1,410**	**$5,025**
					Construction Mark Up at 20.0%		**$1,005**
					Original Construction Cost		**$6,030**
Date of Original Estimate: 12/20/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$6,030**
					Professional Fees at 16.0%		**$965**
					TOTAL PROJECT COST		**$6,995**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	4003AC01	**Category Code:**	AC3B
Priority Sequence:	4		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/9/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Room Only: Floor(s) 1
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail design relative to current standards. Future renovation efforts should include stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	1	$729	$729	$663	$663	$1,393
Base Material/Labor Costs				**$729**		**$663**	
Indexed Material/Labor Costs				**$725**		**$668**	**$1,394**
Construction Mark Up at 20.0%							**$279**
Original Construction Cost							**$1,672**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,672**
Professional Fees at 16.0%							**$268**
TOTAL PROJECT COST							**$1,940**

All costs shown as Present Value

ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS

Project Number:	4003HE01	**Category Code:** HE6F	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	12/9/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1
OSHA	29 CFR 1910.1001, 1926.1101		

Description

Asbestos-containing materials (ACMs) are suspected to exist in the adhered acoustical tile ceilings. Prior to replacing these systems, the ACMs should be properly investigated and abated. This project provides a budget for the abatement of ACMs prior to the renewal of the affected finishes if necessary.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Typical asbestos abatement of attached ceiling finishes	SF	2,860	$0.08	$229	$1.18	$3,375	$3,604
Base Material/Labor Costs				**$229**		**$3,375**	
Indexed Material/Labor Costs				**$227**		**$3,402**	**$3,629**
Construction Mark Up at 20.0%							**$726**
Original Construction Cost							**$4,355**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,355**
Professional Fees at 16.0%							**$697**
TOTAL PROJECT COST							**$5,052**

All costs shown as Present Value

SITE PEDESTRIAN PAVING RENEWAL

Project Number:	4003SI01
Priority Sequence:	6
Priority Class:	Noncritical
Project Class:	Corrective Action
Date Basis:	12/9/2018

Category Code: SI1A

System:	SITE
Component:	ACCESS
Element:	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Undefined: Floor(s) 1

Description

The concrete paving in the courtyard is in poor condition and should be replaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian concrete walkways	SF	540	$4.23	$2,284	$4.66	$2,516	$4,801
			Base Material/Labor Costs	**$2,284**		**$2,516**	
			Indexed Material/Labor Costs	**$2,270**		**$2,537**	**$4,807**
						Construction Mark Up at 20.0%	**$961**
						Original Construction Cost	**$5,768**
Date of Original Estimate: 12/9/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$5,768**
						Professional Fees at 16.0%	**$923**
						TOTAL PROJECT COST	**$6,691**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW07	WALL, EXTERIOR, SIDING, WOOD BOARD, PREMIUM	SCREEN WALLS			600	SF	1.12	$10,620	2014	40		2054
EW08	WALL, EXTERIOR, SIDING, T-111 PLYWOOD	GROUNDS SHED			1,320	SF	1.12	$17,834	1972	25	20	DR
WN05	GLASS, STOREFRONT				296	SF	1.12	$41,791	2014	40		2054
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	MAIN			1,920	SF	1.12	$347,438	1972	40	5	DR
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM			124	500	SF	1.12	$122,605	1972	40	5	DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				2	LEAF	1.00	$6,044	2014	25	20	2059
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			10	LEAF	1.00	$20,066	2014	40	5	2059
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			3	LEAF	1.00	$6,020	2014	40	5	2059
DR20	DOOR, EXTERIOR, OVERHEAD PANEL OR SECTIONAL, PAINTED, LOCK				80	SF	1.00	$5,032	2014	20	25	2059
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			6	EA	1.00	$40,622	2014	20		2034
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			2	EA	1.00	$13,541	2014	20		2034
DR31	DOOR OPERATOR, OVERHEAD PANEL DOOR, RESIDENTIAL, PADS				1	EA	1.00	$893	2014	20	25	2059
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				3	EA	1.00	$2,839	2014	12	33	2059
DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			10	EA	1.00	$11,870	2014	12	33	2059
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			2	EA	1.00	$2,374	2014	12		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR03	ROOF - 1-PLY, UNBALLASTED				1,200	SF	1.00	$14,201	2014	20		2034
RR13	ROOF - SHINGLE ASPHALT COMPOSITE, STANDARD				17,000	SF	1.00	$101,819	2014	18		2032
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED				680	LF	1.00	$12,981	2014	20		2034
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				64	LEAF	1.00	$141,532	1972	60		2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			7	LEAF	1.00	$25,680	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			3	LEAF	1.00	$11,006	2014	60		2074
DR03	DOOR - OVERHEAD, INTERIOR				24	SF	1.00	$2,501	2014	45		2059
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			64	EA	1.00	$48,186	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			3	EA	1.00	$2,259	2014	35		2049
DR26	DOOR PANIC HARDWARE, INTERIOR				7	EA	1.00	$8,309	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				200	LF	1.00	$112,176	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				39,940	SF	1.00	$111,473	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				2,100	SF	1.00	$85,053	2014	60		2074
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				2,140	SF	1.00	$25,495	2014	12	3	2029
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				710	SF	1.00	$4,886	1972	20	25	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF04	FLOORING - VINYL SHEET, STANDARD				1,430	SF	1.00	$16,120	2014	15		2029
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				710	SF	1.00	$25,039	2014	40		2054
IF10	FLOORING - HARDWOOD STRIP, STANDARD	REFINISHED			2,570	SF	1.00	$41,051	2014	50		2064
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				1,140	SF	1.00	$3,987	1972	10	35	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				1,140	SF	1.00	$12,688	2014	45		2059
IC03	CEILING FINISH - ATTACHED ACOUSTICAL TILE				2,860	SF	1.00	$22,129	1972	45		DR
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				10,280	SF	1.00	$28,692	2014	24		2038
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				12	EA	1.00	$16,214	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2014 INSTALL			9	EA	1.00	$6,953	2014	20		2034
FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL			1	EA	1.00	$773	1972	20	25	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	2014 INSTALL			1	EA	1.00	$1,664	2014	50		2064
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			1	EA	1.00	$1,664	1972	50		2022
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				1	EA	1.00	$1,138	2014	35		2049
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE				2	EA	1.00	$1,299	2014	35		2049
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	STANDARD			6	EA	1.00	$10,170	2014	35		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	CHILD SCALED			3	EA	1.00	$5,085	2014	35		2049
BF01	BACKFLOW PREVENTER (<=1 INCH)			135	1	EA	0.50	$503	2016	20		2036
PS14	SUPPLY PIPING SYSTEM - OFFICE	ORIGINAL			1,000	SF	1.00	$4,137	1972	50		2022
PS14	SUPPLY PIPING SYSTEM - OFFICE	2015 UPGRADE			14,863	SF	1.00	$61,492	2015	50		2065
TK06	EXPANSION TANK, STL PT (<20 GAL)	PROFLO	0000005522	M0-01	10	GAL	1.00	$1,008	2015	30		2045
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	A.O. SMITH	0000005521	M0-01	119	GAL	1.00	$13,845	2015	30		2045
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	RHEEM	0000003357	M1-01	119	GAL	1.00	$13,845	2002	30		2032
WH18	WATER HEATER - COMMERCIAL, ELECTRIC (225-325 GAL)	NATIONAL	0000003349	M0-01	250	GAL	1.00	$52,066	1972	30	15	DR
PD14	DRAIN PIPING SYSTEM - OFFICE	ORIGINAL			1,000	SF	1.00	$6,188	1972	60		2032
PD14	DRAIN PIPING SYSTEM - OFFICE	2015 UPGRADE			14,863	SF	1.00	$91,976	2015	60		2075
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	LIBERTY PUMP		M0-01	1	EA	1.00	$710	2010	20		2030
BL26	BOILER - GAS (800-1500 MBH)	NATIONAL	0000003347	M0-01	945	MBH	1.00	$52,171	1972	28	17	DR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DAIKIN	0000004090	SITE	8	TON	1.00	$18,318	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DAIKIN	0000005529	SITE	6	TON	1.00	$13,739	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FUJITSU	0000005528	SITE	2	TON	1.00	$4,580	2015	25		2040

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	0000004089	SITE	10	TON	1.00	$22,898	2015	25		2040
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	DAIKIN	0000006497	SITE	12	TON	1.00	$14,794	2015	25		2040
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)		0000004775		4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-2	0000004777	HP1-2	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-3	0000004778	HP3-7	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-5	0000004779	HP1-5	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-3	0000005577	HP2-3	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP3-7	0000005578	HP3-7	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-6	0000005526	HP2-6	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	MDF	0000005524		4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-7	0000005527	HP2-7	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-10	0000005574	HP1-10	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-2	0000005575	HP2-2	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-4	0000009103	HP2-4	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-7	0000004781	HP1-7	4	KW	1.00	$1,805	2015	30		2045

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-1	0000005523	HP2-1	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP2-5	0000005525	HP2-5	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)		0000004089		4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)		0000005528		4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)		0000005529		4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-6	0000004782	HP1-6	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-8	0000004783	HP1-8	4	KW	1.00	$1,805	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	HP1-9	0000005576	HP1-9	4	KW	1.00	$1,805	2015	30		2045
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU#5	0000003351	M0-01	3	HP	1.00	$23,495	1972	35	10	DR
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU#6	0000003352	M0-01	3	HP	1.00	$23,495	1972	35	10	DR
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	ERU1-2	0000004780	ATTIC	500	CFM	1.00	$4,314	2015	25		2040
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	ERU3-1	0000005579	ATTIC	500	CFM	1.00	$4,314	2015	25		2040
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	ERU1-1	0000004776	ATTIC	500	CFM	1.00	$4,314	2015	25		2040
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ILG		MDF1-1	1	HP	1.00	$2,726	1995	20	2	DR
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		T1-6	1	HP	0.15	$409	2016	20		2036

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		T1-7	1	HP	0.15	$409	2016	20		2036
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		J1-1	1	HP	0.15	$409	2016	20		2036
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		T1-8	1	HP	0.15	$409	2016	20		2036
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		T1-5	1	HP	0.15	$409	2016	20		2036
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		T1-1	1	HP	0.15	$409	2016	20		2036
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		T1-2	1	HP	0.15	$409	2016	20		2036
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000003395	139	8	LF	1.00	$8,412	2005	30		2035
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	2015 UPGRADE			14,863	SF	0.10	$42,729	2015	45		2060
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL			1,000	SF	1.00	$28,749	1972	45		DR
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006661	M0-01	1	HP	0.50	$846	2015	30		2045
PH01	PUMP - ELECTRIC (<=10 HP)	B&G		M1-01	1	HP	1.00	$1,693	2002	30		2032
PH01	PUMP - ELECTRIC (<=10 HP)	B&G		M1-01	1	HP	1.00	$1,693	2002	30		2032
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR		M0-01	1	HP	1.00	$1,693	2015	30		2045
PH01	PUMP - ELECTRIC (<=10 HP)	HEATING HOT WTR		M0-01	1	HP	1.00	$1,693	2015	30		2045
TK23	EXPANSION TANK, STL PT (50-450 GAL)			M0-01	50	GAL	1.00	$1,684	1972	30	15	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE				15,863	SF	1.00	$43,925	2015	20		2035
BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				15,863	SF	1.00	$12,383	2015	10		2025
BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				15,863	SF	1.00	$6,309	2015	10		2025
HU48	EVAPORATIVE COOLER (>1/2 HP<=1 HP)	MAU-1	0000003367	ROOF	1	HP	1.00	$3,295	1972	20	25	DR
FS01	FIRE SPRINKLER SYSTEM - WET		0000004665		15,863	SF	1.00	$214,605	1972	80		2052
FA01	FIRE ALARM SYSTEM - DEVICES				15,863	SF	1.00	$68,180	2013	18		2031
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	0000004662	MDF1-1	1	EA	1.00	$2,254	2013	18		2031
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		MDF1-1	1	EA	1.00	$13,857	2013	18		2031
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC			2	EA	1.00	$152,434	1972	25	20	DR
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	2015 UPGRADE			14,863	SF	1.00	$329,212	2015	50		2065
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	ORIGINAL			1,000	SF	1.00	$22,150	1972	50		2022
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SQ D		M0-01	600	AMP	1.00	$47,259	1972	40	5	DR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			20	EA	1.00	$10,171	1972	20	25	DR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED			4	EA	1.00	$2,034	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			6	EA	1.00	$4,630	2015	20		2035

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	4	EA	1.00	$5,264	2015	20		2035
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	2015 UPGRADE			14,863	SF	1.00	$194,683	2015	20		2035
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE	ORIGINAL			1,000	SF	1.00	$13,099	1972	20	25	DR
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				7,431	SF	1.00	$17,066	2015	20		2035
GN11	SWITCH - AUTO TRANSFER, 208 OR 240 V (>100 AMP)	LIFE SAFETY-1	0000006598	M0-01	125	AMP	1.00	$3,412	2015	25		2040
CK01	COMMERCIAL KITCHEN EQUIPMENT ESTIMATE BY SQUARE FOOT			KITCHEN	1,100	SF	0.20	$194,622	2014	20	25	2059
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			SERVICE LOT	360	SY	1.00	$1,421	2014	7		2021
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT			CHILD CARE	350	LF	1.00	$16,940	2014	30		2044
								Grand Total:	**$3,495,890**			

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, SIDING, T-111 PLYWOOD	GROUNDS SHED	1,320	SF	$17,834	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	MAIN	1,920	SF	$347,438	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM		500	SF	$122,605	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		710	SF	$4,886	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		1,140	SF	$3,987	DR
C3030	CEILING FINISH - ATTACHED ACOUSTICAL TILE		2,860	SF	$22,129	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL	1	EA	$773	DR
D2020	WATER HEATER - COMMERCIAL, ELECTRIC (225-325 GAL)	NATIONAL	250	GAL	$52,066	DR
D3020	BOILER - GAS (800-1500 MBH)	NATIONAL	945	MBH	$52,171	DR
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU#5	3	HP	$23,495	DR
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU#6	3	HP	$23,495	DR
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ILG	1	HP	$2,726	DR
D3040	HVAC DISTRIBUTION NETWORKS - OFFICE	ORIGINAL	1,000	SF	$28,749	DR
D3040	EXPANSION TANK, STL PT (50-450 GAL)		50	GAL	$1,684	DR
D3090	EVAPORATIVE COOLER (>1/2 HP<=1 HP)	MAU-1	1	HP	$3,295	DR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC	2	EA	$152,434	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SQ D	600	AMP	$47,259	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT, RECESSED	20	EA	$10,171	DR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5020	LIGHTING SYSTEM, INTERIOR - OFFICE	ORIGINAL	1,000	SF	$13,099	DR
				TOTAL DEFERRED RENEWAL COST	**$930,296**	

No Projected Component Replacement Cost for Asset No. 4003 for 2018

No Projected Component Replacement Cost for Asset No. 4003 for 2019

No Projected Component Replacement Cost for Asset No. 4003 for 2020

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		360	SY	$1,553	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,553**	

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL	1	EA	$1,873	2022
D2020	SUPPLY PIPING SYSTEM - OFFICE	ORIGINAL	1,000	SF	$4,656	2022

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	ORIGINAL	1,000	SF	$24,930	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$31,459**	

No Projected Component Replacement Cost for Asset No. 4003 for 2023

No Projected Component Replacement Cost for Asset No. 4003 for 2024

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE		15,863	SF	$7,759	2025
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE		15,863	SF	$15,230	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$22,989**	

2026

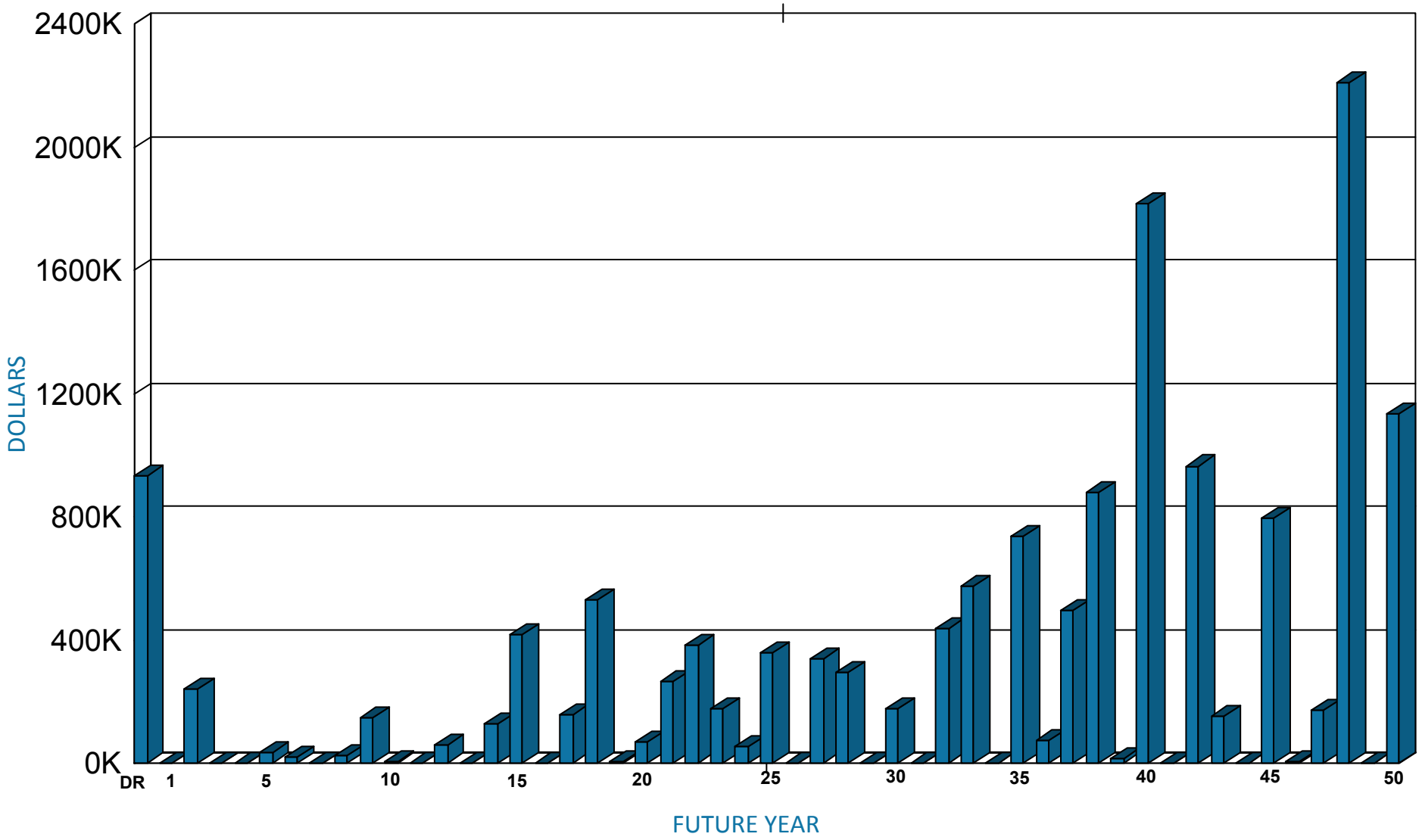
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		39,940	SF	$141,210	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	2	EA	$3,007	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$144,218**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 4003 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.69

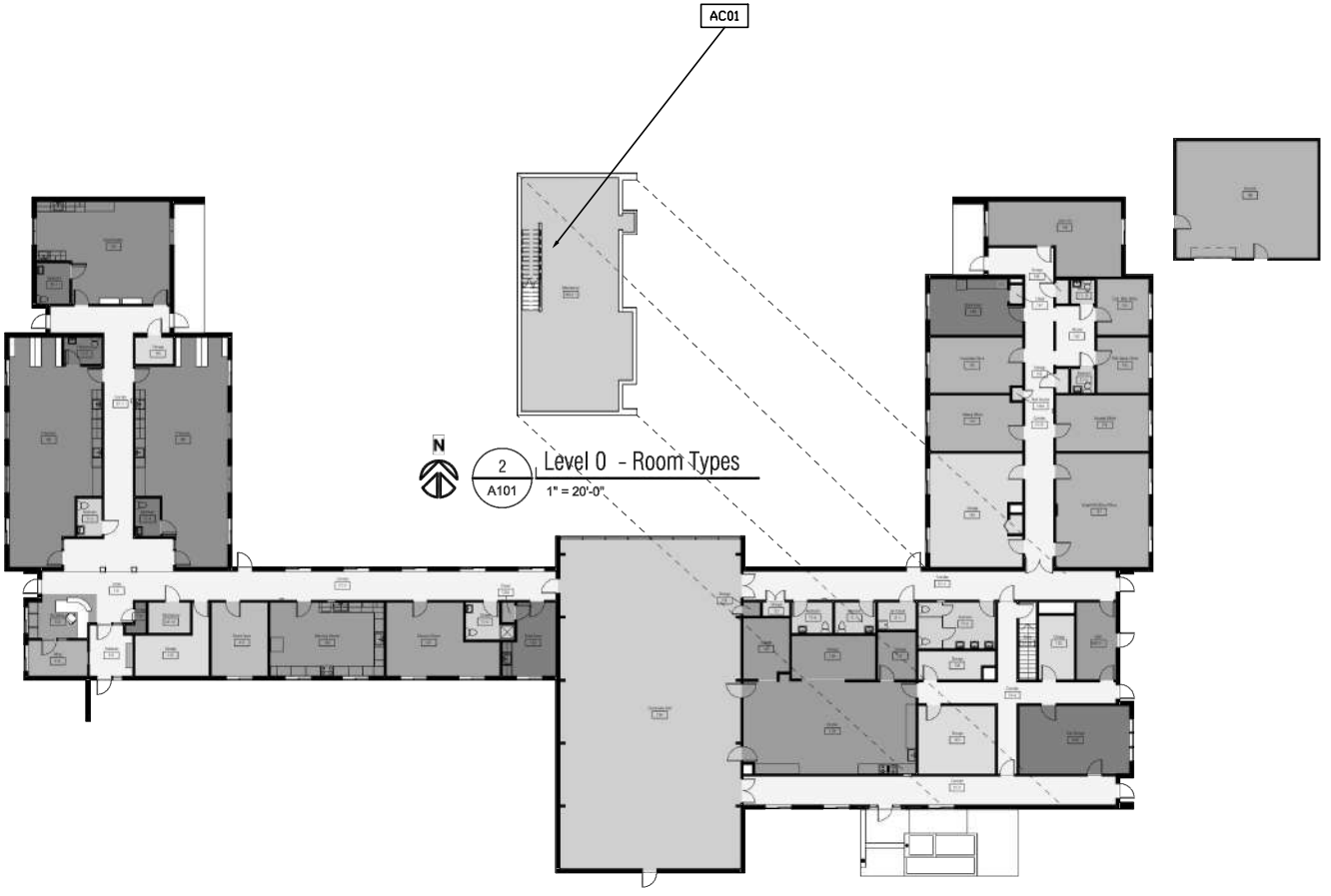
FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

ROOF
FS02



FS01 SI01
AC02 HE01

COMMUNITY
HALL
ANNEX

BLDG NO. 4003

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/21/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 1

SECTION 6

PHOTOGRAPHS

4003001a 9/14/2018

Main entrance

South elevation

4003001e 9/14/2018

Swamp cooler

Roof

4003002a 9/14/2018

Roof and exterior finishes

South elevation

4003002e 9/14/2018

Heat pump

Attic

4003003a 9/14/2018

Roof and exterior finishes

South elevation

4003003e 9/14/2018

HVAC piping

Attic

4003004a 9/14/2018

Roof and gutter system

Roof

4003004e 9/14/2018

Evaporator

First floor, room 141

4003005a 9/14/2018

Main roof and outbuilding

Roof

4003005e 9/14/2018

Motor control center

Basement, boiler room

4003006a 9/14/2018

Roof access and flat roofed area

Roof

4003006e 9/14/2018

Automatic transfer switch

Basement, boiler room

4003007a 9/14/2018

Entrance portico roof

Roof

4003007e 9/14/2018

Expansion tank

Basement, boiler room

4003008a 9/14/2018

Top roof deck membrane

Roof

4003008e 9/14/2018

Water heater

Basement, boiler room

4003009a 9/14/2018

Typical attic construction

Attic

4003009e 9/14/2018

Pump equipment

Basement, boiler room

4003010a 9/14/2018

Maintenance walkway in the attic area

Attic

4003010e 9/14/2018

Air handling unit

Basement, boiler room

4003011a 9/14/2018

Attic access from the main level

Attic

4003011e 9/14/2018

Expansion tank

Basement, boiler room

4003012a 9/14/2018

Typical corridor finishes

Corridor C1-4

4003012e 9/14/2018

HVAC control panel

Basement, boiler room

4003013a 9/14/2018
Basement stair and handrails
Room M0-01

4003013e 9/14/2018
Sprinkler head and interior lighting
First floor, men's restroom

4003014a 9/14/2018
Stair with noncompliant handrails
Room M0-01

4003014e 9/14/2018
Energy recovery unit
Attic

4003015a 9/14/2018
Basement mechanical area conditions
Room M0-01

4003015e 9/14/2018
Annunciator
First floor, corridor

4003016a 9/14/2018
Exit door, hardware, and signage
Near room 148

4003016e 9/14/2018
Fire alarm panels
First floor, fire alarm room

4003017a 9/14/2018
Detail at a typical window unit
Room 155

4003017e 9/14/2018
Evaporator
First floor, fire alarm room

4003018a 9/14/2018
Door with noncompliant hardware and missing signage
Room 149

4003018e 9/14/2018
Exhaust fan
First floor, fire alarm room

4003019a 9/14/2018
Restroom door with noncompliant hardware
Room

4003019e 9/14/2018
Hood
First floor, kitchen

4003020a 9/14/2018
Water closet and lavatory
Room T1-9

4003020e 9/14/2018
Wash basin
First floor, kitchen

4003021a 9/14/2018
Break room casework and sink
Room 146

4003021e 9/14/2018
Interior lighting
First floor, kitchen

4003022a 9/14/2018
Un Fireproofed penetrations
Room 144A

4003022e 9/14/2018
Exit signage
First floor, corridor

4003023a 9/14/2018
Unfireproofed penetrations
Room 144A

4003023e 9/14/2018
Exterior lighting
South elevation

4003024a 9/14/2018
Typical corridor finishes
Corridor C1-3

4003024e 9/14/2018
Pull station
First floor, corridor

4003025a 9/14/2018

Toilet partitions

Room T1-8

4003025e 9/14/2018

Water heater

First floor, fire riser room

4003026a 9/14/2018

Accessible stall and water closet

Room T1-8

4003026e 9/14/2018

Pump equipment

First floor, fire riser room

4003027a 9/14/2018

Lavatories and finishes

Room T1-8

4003027e 9/14/2018

Evaporator

First floor, room 117

4003028a 9/14/2018
Restroom door with powered door opener
Room T1-8

4003028e 9/14/2018
Drain and supply piping
First floor, room 120

4003029a 9/14/2018
Utility sink
Room J1-1

4003029e 9/14/2018
Drain and supply piping
First floor, room 123

4003030a 9/14/2018
All-gender restroom water closet and accessories
Room T1-7

4003030e 9/14/2018
Heat pump
Attic

4003031a 9/14/2018
All-gender restroom lavatory and area finishes
Room T1-7

4003031e 9/14/2018
Interior lighting
First floor, room 101

4003032a 9/14/2018
Storefront system wall
Corridor C1-3

4003032e 9/14/2018
Exterior lighting
West elevation

4003033a 9/14/2018
Commercial kitchen equipment and casework
Room 139

4003033e 9/14/2018
Condensing unit
Site

4003034a 9/14/2018
Commercial kitchen equipment and casework
Room 139

4003034e 9/14/2018
Exterior lighting
North elevation

4003035a 9/14/2018
Overhead door at serving hatch
Room 139

4003035e 9/14/2018
Exterior lighting
East elevation

4003036a 9/14/2018
Corridor finishes in the daycare center area
Corridor C1-1

4003036e 9/14/2018
Exterior lighting
Building exterior

4003037a 9/14/2018
Corridor finishes in the daycare center area
Corridor C1-2

4003037e 9/14/2018
Exterior lighting
Outbuilding

4003038a 9/14/2018
Lobby area casework
Lobby 111

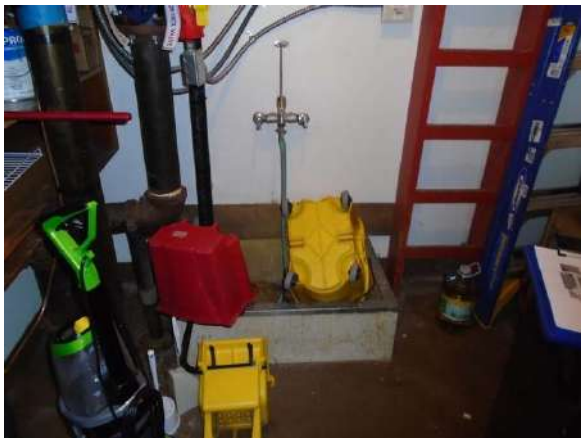
4003038e 9/14/2018
Interior lighting
First floor, garage

4003039a 9/14/2018
Exit door, hardware, and signage
Lobby 111

4003039e 9/14/2018
Unit heater
First floor, garage

4003040a 9/14/2018
Entrance vestibule doors, hardware, and signage
Lobby 111

4003040e 9/14/2018
Panelboard
First floor, garage

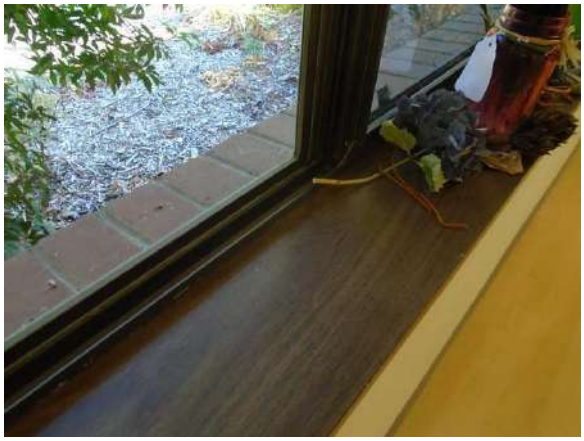


4003041a 9/14/2018
Utility sink
Room M1-01

4003041e 9/14/2018
Fire extinguisher
First floor, garage

4003042a 9/14/2018
Attic access from the main level
Room M1-01

4003042e 9/14/2018
Condensing unit
Site



4003043a 9/14/2018

Detail at the corridor glazing

Corridor C1-2

4003043e 9/14/2018

Exterior lighting

West elevation

4003044a 9/14/2018

Compliant room signage

Corridor C1-2

4003044e 9/14/2018

Exterior lighting

East elevation

4003045a 9/14/2018

Daycare kitchen casework

Room 120

4003045e 9/14/2018

Condensing units

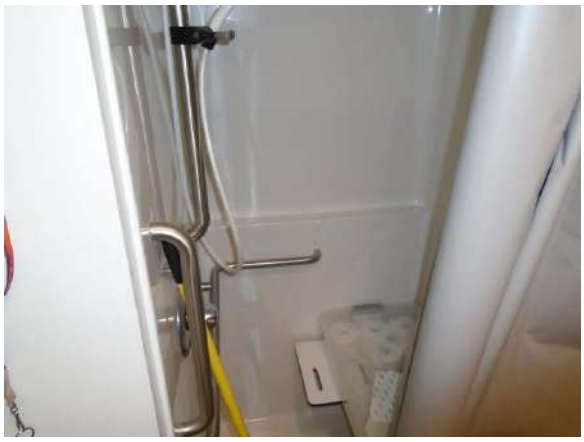
Site

4003046a 9/14/2018
Daycare kitchen casework
Room 120

4003046e 9/14/2018
Panelboard
South elevation

4003047a 9/14/2018
Floor finish
Room 121

4003047e 9/14/2018
Transformer
Site



4003048a 9/14/2018
Accessible shower
Room T1-5

4003048e 9/14/2018
Exterior lighting
Site

4003049a 9/14/2018

Typical rated door label

Corridor C1-2

4003049e 9/14/2018

Exterior lighting

South elevation

4003050a 9/14/2018

Casework in a typical child care room

Room 101

4003050e 9/14/2018

Exterior lighting

Site

4003051a 9/14/2018

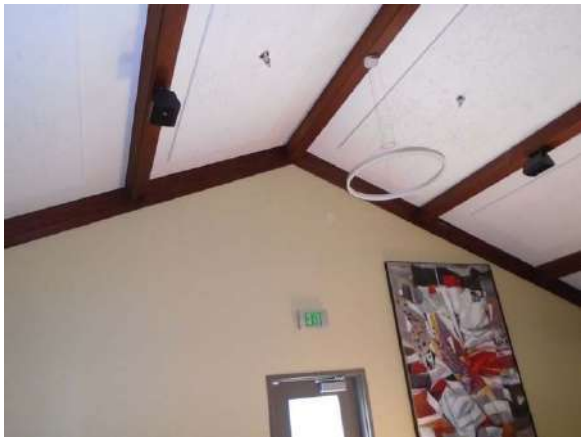
Child-scaled toilet and accessories

Room T1-1

4003052a 9/14/2018

Child-scaled toilet and accessories

Room T1-1



4003053a 9/14/2018
Community Hall adhered acoustical tile ceiling
Room 124

4003054a 9/14/2018
Floor finish
Room 124

4003055a 9/14/2018
Overhead door at the kitchen serving hatch
Room 124

4003056a 9/14/2018
Exit doors, hardware, and signage
Room 124

4003057a 9/14/2018
Window wall in the Community Hall
Room 124

4003058a 9/14/2018
Entrance door and hardware
Corridor C1-5

4003059a 9/14/2018
Fenced play yard at the child care center
West elevation

4003060a 9/14/2018
Exterior finishes and site conditions
West elevation

4003061a 9/14/2018
Door to the play yard
West elevation

4003062a 9/14/2018
Play yard concrete walkways
West elevation

4003063a 9/14/2018
Courtyard
North elevation

4003064a 9/14/2018
Compliant ramp to the child care area
North elevation

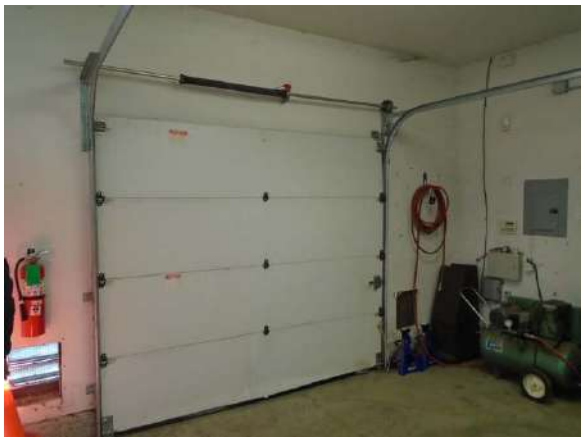
4003065a 9/14/2018
Courtyard paving in need of replacement
North elevation

4003066a 9/14/2018
Courtyard paving in need of replacement
North elevation

4003067a 9/14/2018
Window wall at the large meeting hall
North elevation

4003068a 9/14/2018
Storefront corridor wall
North elevation

4003069a 9/14/2018
Grounds building
South elevation



4003070a 9/14/2018
Grounds building interior with overhead sectional door
Room 180

4003071a 9/14/2018
Grounds building and site conditions
East elevation

4003072a 9/14/2018
Grounds building and site conditions
North elevation

4003073a 9/14/2018
Grounds building and site conditions
West elevation

4003074a 9/14/2018
Service area parking lot
East elevation

4003075a 9/14/2018
Service area parking lot
East elevation

4003076a 9/14/2018
Detail at the wood screen wall for the emergency generator
East elevation

4003077a 9/14/2018
Wood screen wall and bus waiting area
South elevation

4003078a 9/14/2018
Entrance and site condition
South elevation

4003079a 9/14/2018
Wood screen wall at the service court
South elevation

4003080a 9/14/2018
Entrance roof and screen wall
South elevation

4003081a 9/14/2018
Exterior finishes and site conditions
South elevation

4003082a 9/14/2018
Exterior finishes and site conditions
South elevation

4003083a 9/14/2018
Exterior finishes and site conditions at the daycare entrance
South elevation

4003084a 9/14/2018
Daycare entrance
South elevation

4003085a 9/14/2018
Typical gutter and downspout
South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	4003
Asset Name	Community Hall Annex
Year Built or Last Energy Renovation	1972

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

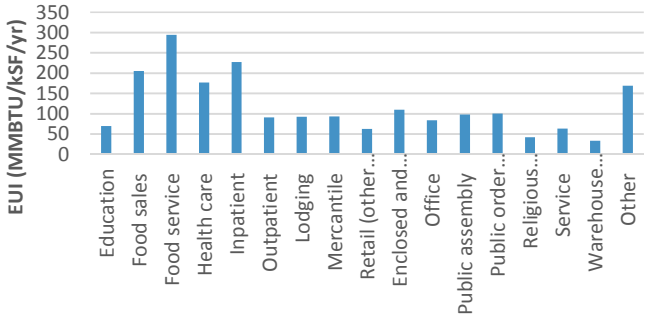
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**84**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 58.8
Energy Efficient (consumes 10% to 30% less energy)	58.8 <= EUI <= 75.6
Similar (consumes within 10% less or 10% more energy)	75.6 < EUI < 92.4
Energy Inefficient (consumes 10% to 30% more energy)	92.4 <= EUI <= 109.2
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 109.2

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

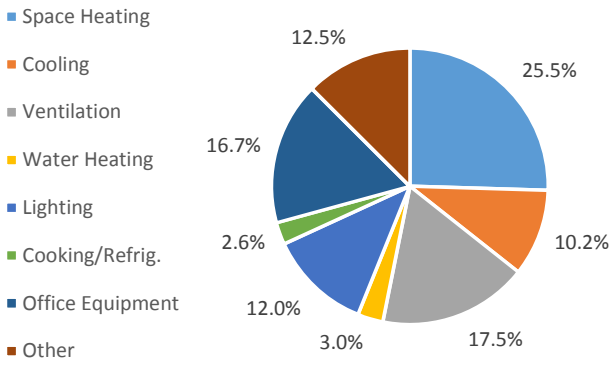


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Central Heating	INSTALL AN ENERGY-EFFICIENT BOILER. Energy-efficient boilers and condensing boilers achieve higher efficiencies than conventional boilers. Research FEMP designated commercial boilers to find the most energy-efficient options.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Southeast Campus

Facility Condition Assessment

Learning Commons
Asset 4005

Inspected September 13, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

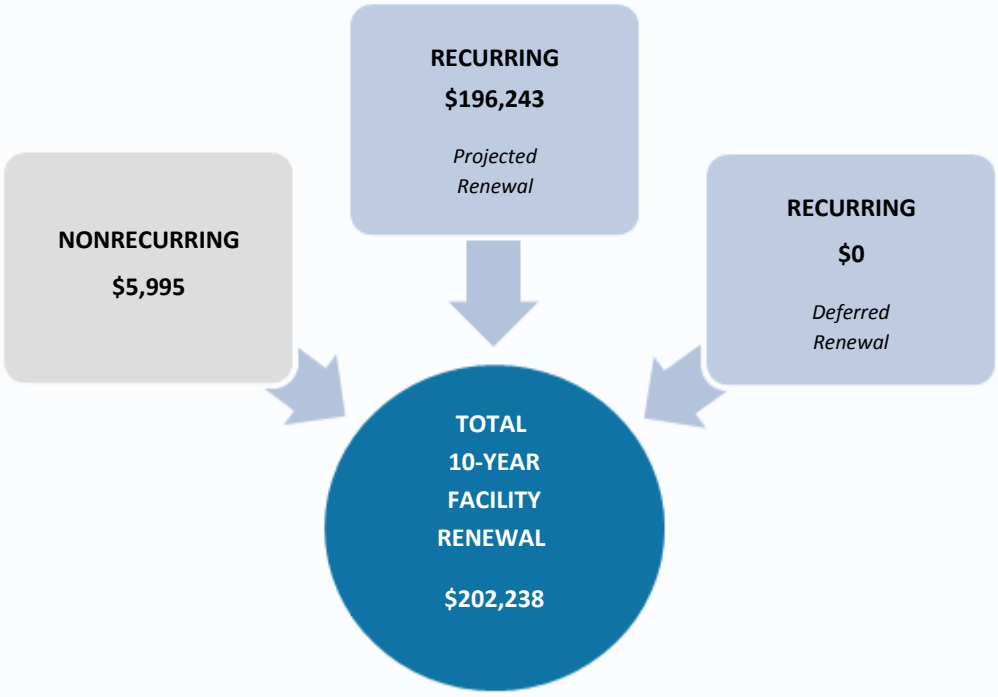
ASSET CODE	4005		
ASSET NAME	LEARNING COMMONS	**CURRENT REPLACEMENT VALUE**	$14,833,000
ASSET USE	Library	**FACILITY CONDITION NEEDS INDEX**	0.01
YEAR BUILT	2014	**FACILITY CONDITION INDEX**	0.00
GSF	38,990	**10-YEAR $/SF**	5.19
INSPECTION DATE	09/13/2018		

FCNI Scale

The FCNI for this asset is **0.01**

- Excellent Condition (typically new construction)
- Good Condition (maintained within lifecycle)
- Fair Condition (normal renovations required)
- Below Average Condition (major renovation required)
- Poor Condition (total renovation required)
- Replacement Indicated (unless historic)

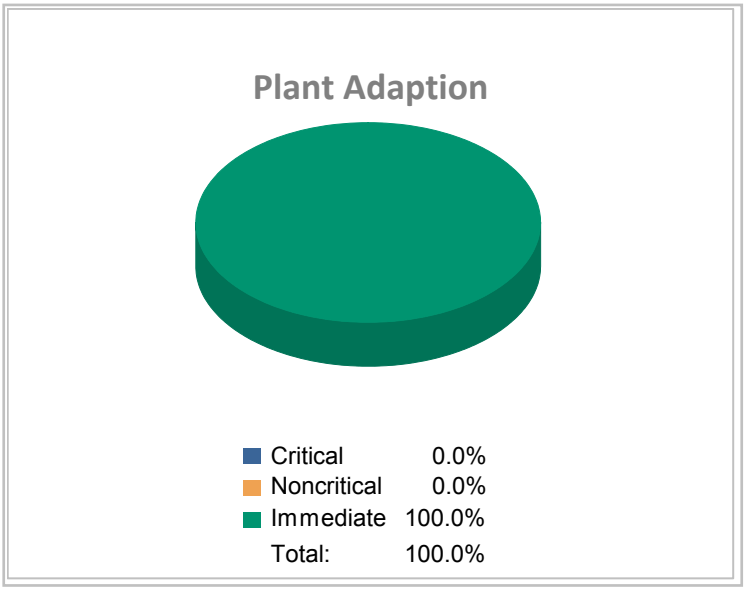
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

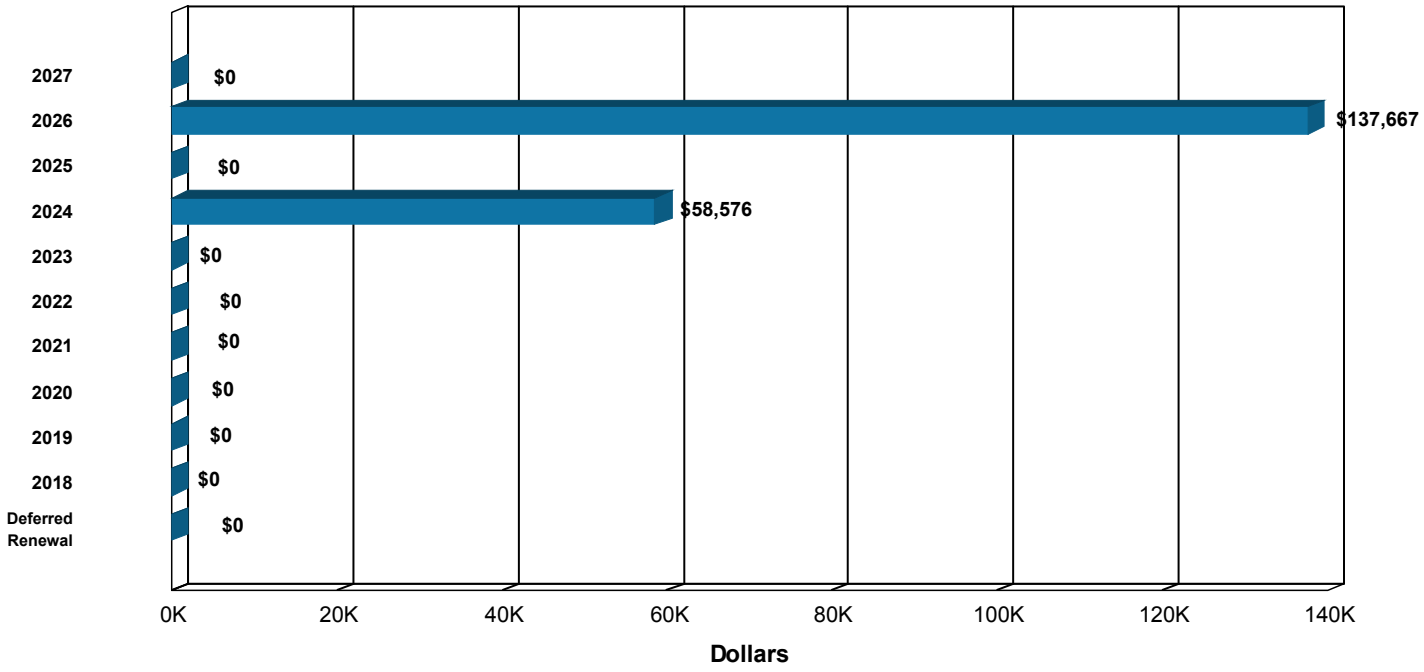
PLANT ADAPTION	
1 - Immediate	**$5,995**
2 - Critical	**$0**
3 - Noncritical	**$0**



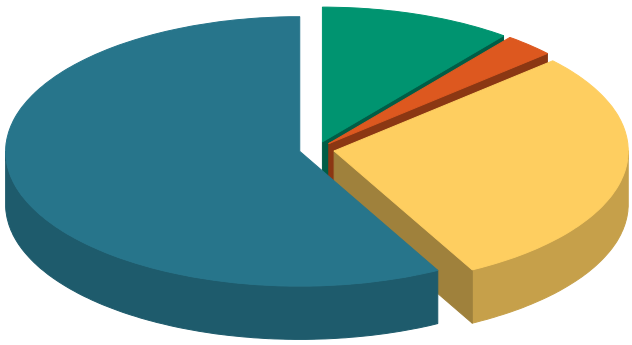
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$0	0%
Exterior	$21,094	10%
Fire/Life Safety	$5,995	3%
Health	$0	0%
HVAC	$58,576	29%
Interiors	$116,573	58%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$202,238**	

ASSET SUMMARY

The Learning Commons is a 38,990 gross square foot, three-story building on the southern end of the Southeastern campus of Portland Community College. Built in 2014, this building is a library and study space for students. The building has a flat roof with skylights that light both the second and third floors. The exterior is clad in brick and metal siding. The ground floor includes a coffee shop operated by a third party on behalf of the college.

Information for this report was gathered during a site visit conducted on September 13, 2018.

Site

The Learning Commons sits on a flat parcel located on the north side of Southeast Division Street in Portland, Oregon. The building is west of the Student Commons and surrounded by concrete pedestrian walkways which are in good condition. A campus drive just west of this building provides limited service access, and parking for users is provided in nearby campus lots.

Exterior Structure

The roof is an unballasted single-ply membrane in good condition. Exterior walls are a combination of brick and metal veneer systems, also in good condition. The windows are curtainwall and storefront systems and the exterior doors are both flush hollow metal and aluminum and glass storefront units. All of these exterior finishes are expected to last another ten or more years.

Interior Finishes/Systems

The floor finishes are carpet, ceramic tile, and plastic laminate. Although these finishes are relatively new and in good condition, the carpet will reach the end of its expected lifecycle in the next ten years and should be replaced. A welded-seam synthetic floor in the kitchen should outlast the scope of this report. The interior wall finishes are paint and ceramic tile. The tile should last beyond the next ten years, but the painted walls should be repainted within the next few years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The doors and casework are also in good condition and no work is recommended at this time.

Accessibility

This building was constructed in 2014 in compliance with the accessibility requirements at that time. The entrances are at grade level and some have powered door openers. The door hardware and signage are compliant with accessibility standards and the restrooms provide the required accessible features.

The elevator has an accessible control panel, and the stairs have compliant railings. There are no accessibility recommendations for this report.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits is adequate for this facility. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without maintaining fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system which incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is in excellent condition. The fire alarm system has substantial remaining service life with no recommendations. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system and additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition.

HVAC

An Aaon outdoor package air handling unit (AHU) provides heating and cooling. The AHU utilizes R410 DX refrigerant for cooling and gas for heating. Distribution equipment consists of metal ductwork with variable air volume (VAV) boxes and the controls are a digital application. The rooftop AHU is equipped with supply fans, exhaust fans, and heat wheels for energy conservation. Cabinet unit heaters support the system. The equipment is in excellent condition and has substantial remaining service life. However, a partial control upgrade may need to be considered on a low priority basis. Cooling is also provided by split systems in select rooms. These units are charged with R410A DX refrigerant and in excellent condition. The split systems should outlast the scope of this report.

Electrical

Power is supplied via underground utilities at 480/277 volts to a 1,200 amp main switchboard in room E1-01. The main electrical equipment is in good condition and has substantial remaining service life. The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased with no recommendations.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures equipped with acrylic or no lenses. The lighting is lamped with T8 or T5 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms to conserve energy. The interior lighting scheme appears to be well maintained and in good condition. The system has remaining service life beyond the scope of this report.

The exterior lighting consists of eave-mounted recessed fixtures and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted and bollard style fixtures on the site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage with no recommendations.

Emergency power is provided by a district source. Two automatic transfer switches (ATSs) provide the power for distribution. The emergency power equipment appears to be well maintained and in good condition.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the equipment serving the AHU. The VFDs are new and in excellent condition.

Plumbing

Domestic water is supplied through a copper piping network. A backflow preventer protects the water system from cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems and backflow preventer are in good condition with no issues reported.

Domestic hot water is provided by an A.O. Smith commercial-grade electric water heater with a tank capacity of 120 gallons. Two expansion tanks and a pump support the water heater. The domestic water heating equipment is new and in excellent condition. A domestic water booster pump system is also present for pressurization. The system is in good condition with no recommendations.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of these fixtures are in good condition and within their normal lifecycle. They should outlast the scope of this report.

Vertical Transportation

This three-story facility has a Schindler hydraulic passenger elevator with a car capacity of 2,500 pounds and controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

September 13, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	21,094	0	$21,094
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	116,573	0	$116,573
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	0	58,576	0	0	0	$58,576
FIRE/LIFE SAFETY	5,995	0	0	0	0	0	0	0	0	0	0	0	0	0	$5,995
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$5,995	$0	$0	$0	$0	$0	$0	$0	$0	$0	$58,576	$0	$137,667	$0	$202,238
TOTAL NONRECURRING PROJECT NEEDS			$5,995	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$196,243	

CURRENT REPLACEMENT VALUE	$14,833,000
FACILITY CONDITION NEEDS INDEX	0.01
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
38,990	$202,238	$5.19

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$0	$21,094	$21,094
INTERIOR	$0	$116,573	$116,573
PLUMBING	$0	$0	$0
HVAC	$0	$58,576	$58,576
FIRE/LIFE SAFETY	$5,995	$0	$5,995
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$5,995**	**$196,243**	**$202,238**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
4005FS01	FIRE RATING COMPROMISE	D4090	1	Plant Adaption	5,995
				TOTAL	**$5,995**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4005	BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				D3060	2024	38,475
4005	BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				D3060	2024	20,101
4005	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			B2030	2026	3,786
4005	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HALF SIZED		ROOF	B2030	2026	6,625
4005	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	2026	10,683
4005	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	98,941
4005	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	17,632
							TOTAL	**$196,243**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	4005FS01	FIRE RATING COMPROMISE	1	$5,995
		TOTAL FOR PLANT ADAPTION		**$5,995**
		GRAND TOTAL:		**$5,995**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	4005FS01	1	Plant Adaption	FIRE RATING COMPROMISE	$5,995
				TOTAL FOR FIRE/LIFE SAFETY	**$5,995**
				GRAND TOTAL:	**$5,995**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

FIRE RATING COMPROMISE

Project Number:	4005FS01	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	11/13/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1,2,3

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without maintaining fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	38,990	$0.03	$1,170	$0.08	$3,119	$4,289
Base Material/Labor Costs				**$1,170**		**$3,119**	
Indexed Material/Labor Costs				**$1,163**		**$3,144**	**$4,307**
Construction Mark Up at 20.0%							**$861**
Original Construction Cost							**$5,168**
Date of Original Estimate: 11/13/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,168**
Professional Fees at 16.0%							**$827**
TOTAL PROJECT COST							**$5,995**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				3,240	SF	1.12	$76,571	2014	25		2039
WN03	GLASS, CURTAIN WALL, STANDARD				1,170	SF	1.12	$221,764	2014	60		2074
WN05	GLASS, STOREFRONT				630	SF	1.12	$88,947	2014	40		2054
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			9	LEAF	1.00	$27,200	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			4	LEAF	1.00	$8,026	2014	40		2054
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	HALF SIZED		ROOF	7	LEAF	0.50	$7,023	2014	40		2054
DR28	DOOR OPERATOR, POWER-ASSIST	VESTIBULE DOORS			2	EA	1.00	$13,541	2014	20		2034
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			2	EA	1.00	$13,541	2014	20		2034
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			4	EA	1.00	$3,786	2014	12		2026
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HALF SIZED		ROOF	7	EA	1.00	$6,625	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			9	EA	1.00	$10,683	2014	12		2026
RR03	ROOF - 1-PLY, UNBALLASTED				100,000	SF	1.00	$1,183,455	2014	20		2034
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				700	SF	1.00	$200,321	2014	35		2049
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			40	LEAF	1.00	$88,458	2014	60		2074
DR01	DOOR AND FRAME, INTERIOR, NON-RATED			VESTIBULE	2	LEAF	1.00	$4,423	2014	60		2074

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			6	LEAF	1.00	$22,011	2014	60		2074
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				40	EA	1.00	$30,116	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR			VESTIBULE	2	EA	1.00	$1,506	2014	35		2049
DR26	DOOR PANIC HARDWARE, INTERIOR				6	EA	1.00	$7,122	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				40	LF	1.00	$22,435	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				35,450	SF	1.00	$98,941	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,970	SF	1.00	$79,788	2014	60		2074
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				1,480	SF	1.00	$17,632	2014	12		2026
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				1,480	SF	1.00	$52,195	2014	40		2054
IF12	FLOORING - LAMINATE PLANK, STANDARD				26,670	SF	1.00	$221,733	2014	25		2039
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				23,710	SF	1.00	$263,897	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				5,930	SF	1.00	$16,551	2014	24		2038
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	SCHINDLER		M1-2	1	EA	1.00	$257,984	2014	25		2039
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				3	EA	1.00	$8,082	2014	25		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				20	EA	1.00	$27,023	2014	35		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	2014	50		2064
FX10	PLUMBING FIXTURE - URINAL				5	EA	1.00	$5,393	2014	35		2049
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				15	EA	1.00	$25,425	2014	35		2049
BF03	BACKFLOW PREVENTER (2-3 INCHES)	FEBCO	0000006951	M1-1	1	EA	1.00	$7,331	2014	20		2034
PP01	DOMESTIC WATER BOOSTER SYSTEM			M1-1	6	HP	1.00	$76,085	2014	20		2034
PS10	SUPPLY PIPING SYSTEM - LIBRARY				38,990	SF	1.00	$186,080	2014	50		2064
TK07	EXPANSION TANK, STL PT (20-26 GAL)	WESSELS	0000006653	M3-1	20	GAL	1.00	$1,370	2014	30		2044
TK08	EXPANSION TANK, STL PT (27-49 GAL)	HT-3-01	0000005363	M3-1	30	GAL	1.00	$1,666	2014	30		2044
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	EWH-3-01	0000005365	M3-1	120	GAL	1.00	$13,961	2014	30		2044
PD10	DRAIN PIPING SYSTEM - LIBRARY				38,990	SF	1.00	$278,740	2014	60		2074
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	RHEEM		SITE	5	TON	1.00	$11,449	2014	25		2039
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	ACCU-3-01	0000005361	ROOF	12	TON	0.70	$10,356	2014	25		2039
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-01	0000005397	BDF1-1	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-03	0000005343	E1-1	1	TON	1.10	$3,267	2014	30		2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-01	0000005356	E2-1	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-02	0000005360	226	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-04	0000005428	M1-2	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-3-01	0000005369	IDF3-1	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-02	0000005401	M1-1	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-05	0000005355	S1-1	1	TON	1.10	$3,267	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-06	0000005342	S1-2	1	TON	1.10	$3,267	2014	30		2044
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	RHEEM			5	TON	1.00	$7,482	2014	30		2044
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	CUH-1-02	0000005341	V1-1	1	HP	0.50	$4,441	2014	35		2049
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	CUH-1-01	0000005400	V1-2	1	HP	0.50	$4,441	2014	35		2049
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-3-01	0000005362	ROOF	40	HP	1.00	$609,543	2014	25		2039
HV10	HVAC DISTRIBUTION NETWORKS - LIBRARY				38,990	SF	1.00	$1,485,887	2014	45		2059
PH01	PUMP - ELECTRIC (<=10 HP)	RHWP-3-01	0000005364	M3-1	1	HP	1.00	$1,693	2014	30		2044
BA10	HVAC CONTROLS - TERMINAL ASSEMBLIES - LIBRARY				38,990	SF	1.00	$135,534	2014	20		2034
BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				38,990	SF	1.00	$38,475	2014	10		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				38,990	SF	1.00	$20,101	2014	10		2024
FS01	FIRE SPRINKLER SYSTEM - WET				38,990	SF	1.00	$527,482	2014	80		2094
FA01	FIRE ALARM SYSTEM - DEVICES			BDF	38,990	SF	1.00	$167,580	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		BDF	1	EA	1.00	$13,857	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		BDF	1	EA	1.00	$13,857	2014	18		2032
SE10	ELECTRICAL DISTRIBUTION NETWORK - LIBRARY				38,990	SF	1.00	$458,443	2014	50		2064
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDP	0000005347	E1-1	1,200	AMP	1.00	$89,981	2014	40		2054
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	EF-A, AHU	0000005326	ROOF	7	HP	1.00	$4,632	2014	15		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	EF-B, AHU	0000005327	ROOF	7	HP	1.00	$4,632	2014	15		2029
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SF-A, AHU	0000005328	ROOF	20	HP	1.00	$7,904	2014	16		2030
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SF-B, AHU	0000005329	ROOF	20	HP	1.00	$7,904	2014	16		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			4	EA	1.00	$2,034	2014	20		2034
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	8	EA	1.00	$10,528	2014	20		2034
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	7	EA	1.00	$13,633	2014	40		2054
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	7	EA	1.00	$8,760	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY				38,990	SF	1.00	$231,281	2014	20		2034
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				19,495	SF	1.00	$44,771	2014	20		2034
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-LS	0000005351	E1-1	100	AMP	1.00	$5,527	2014	25		2039
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-OS	0000005352	E1-1	100	AMP	1.00	$5,527	2014	25		2039
								Grand Total:	**$7,660,332**			

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 4005 for DR

No Projected Component Replacement Cost for Asset No. 4005 for 2018

No Projected Component Replacement Cost for Asset No. 4005 for 2019

No Projected Component Replacement Cost for Asset No. 4005 for 2020

No Projected Component Replacement Cost for Asset No. 4005 for 2021

No Projected Component Replacement Cost for Asset No. 4005 for 2022

No Projected Component Replacement Cost for Asset No. 4005 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY		38,990	SF	$24,002	2024

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY		38,990	SF	$45,941	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$69,943**	

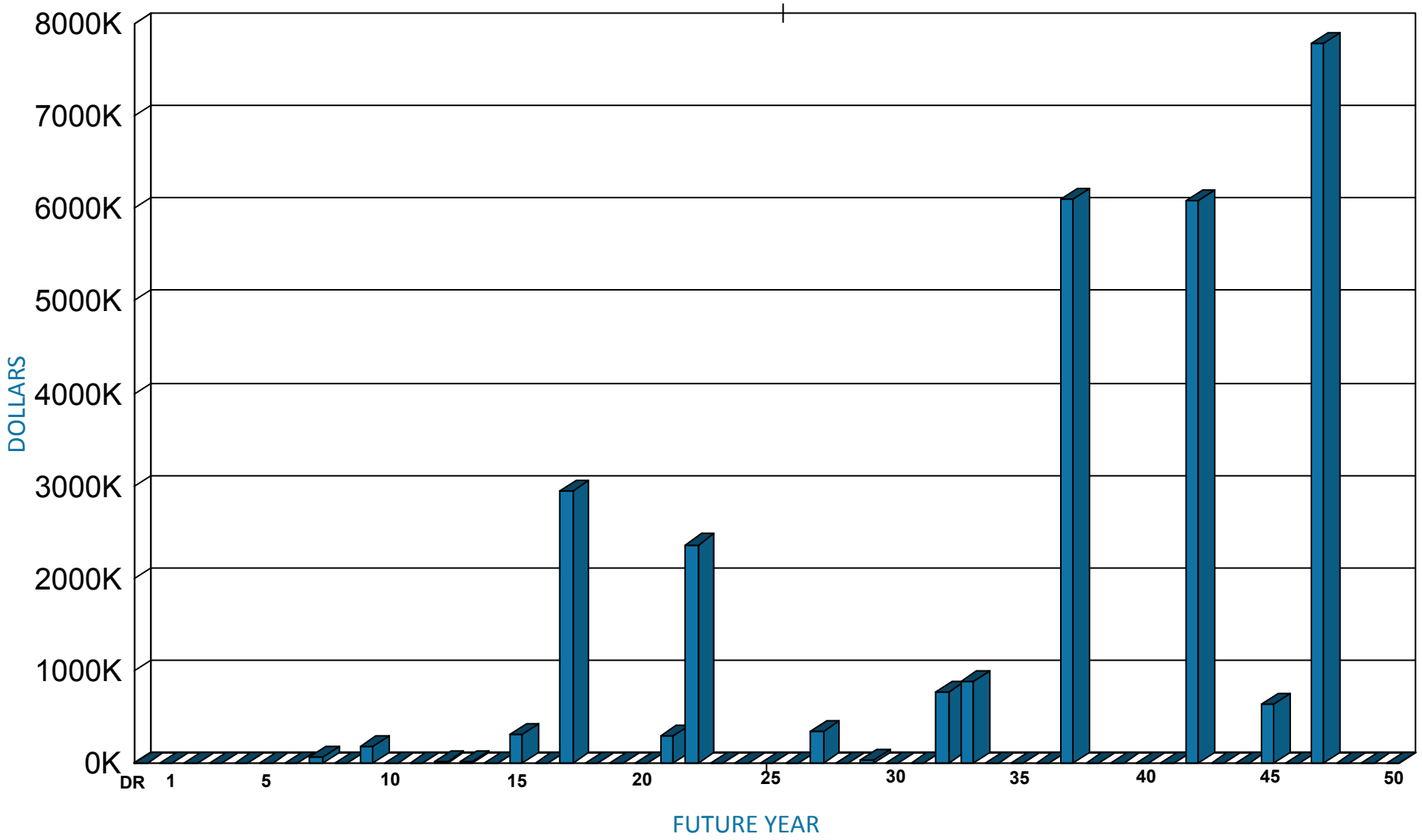
No Projected Component Replacement Cost for Asset No. 4005 for 2025

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		1,480	SF	$22,335	2026
C3010	WALL FINISH - APPLIED, STANDARD		35,450	SF	$125,336	2026
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS	4	EA	$4,796	2026
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HALF SIZED	7	EA	$8,392	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	9	EA	$13,533	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$174,392**	

No Projected Component Replacement Cost for Asset No. 4005 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $5.18

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

NO CAD DRAWINGS ARE AVAILABLE FOR THIS BUILDING

SECTION 6

PHOTOGRAPHS

4005001a 9/13/2018
Roof membrane and skylight
Roof

4005001e 9/13/2018
Car operating panel
Elevator cab

4005002a 9/13/2018
Upper roof with fall protection tie-offs
Roof

4005002e 9/13/2018
Air handling unit
Roof

4005003a 9/13/2018
Lower roof and mechanical screen wall
Roof

4005003e 9/13/2018
Condensing unit
Roof

4005004a 9/13/2018

Roof drain and overflow drain

Roof

4005004e 9/13/2018

Water heater

Third floor, room M3-1

4005005a 9/13/2018

Typical glazing system

Roof

4005005e 9/13/2018

Pump equipment

Third floor, room M3-1

4005006a 9/13/2018

Detail at the glazing system

Roof

4005006e 9/13/2018

Drain piping

Third floor, room M3-1

4005007a 9/13/2018
Skylight and metal siding
Roof

4005007e 9/13/2018
Expansion tank
Third floor, room M3-1

4005008a 9/13/2018
Lower roof skylights
Roof

4005008e 9/13/2018
Light switch
Third floor, room M3-1

4005009a 9/13/2018
Lower roof mechanical systems and glazing
Roof

4005009e 9/13/2018
Interior lighting
Third floor, room M3-1

4005010a 9/13/2018
Mechanical chase with half sized access door
Roof

4005010e 9/13/2018
Service sink
Third floor, room J3-1

4005011a 9/13/2018
Utility sink
Room J3-1

4005011e 9/13/2018
Interior lighting
Third floor, corridor

4005012a 9/13/2018
Accessible all-gender restroom water closet and lavatory
Room T3-1

4005012e 9/13/2018
Sprinkler head
Third floor, room 302

4005013a 9/13/2018
Lavatory, accessories, and area finishes
Room T3-1

4005013e 9/13/2018
Interior lighting
Third floor, corridor

4005014a 9/13/2018
Stack space finishes
Room 301

4005014e 9/13/2018
Interior lighting
Third floor, corridor

4005015a 9/13/2018
Stack space and exit door, hardware, and signage
Room 301

4005015e 9/13/2018
Evaporator
Third floor, room IDF-3

4005016a 9/13/2018

Stair with compliant railings

Stair S3-2

4005016e 9/13/2018

Interior lighting

Third floor, room IDF-3

4005017a 9/13/2018

Accessible drinking fountains

Room 301

4005017e 9/13/2018

Digital thermostat

Third floor, room IDF-3

4005018a 9/13/2018

Accessible elevator control panel

Elevator

4005018e 9/13/2018

Panelboards

Third floor, room IDF-3

4005019a 9/13/2018
Typical fire-rated door label
Stair S3-1

4005019e 9/13/2018
Panelboards and transformer
Second floor, room E2-1

4005020a 9/13/2018
Floor penetrations not firestopped
Room E3-1

4005020e 9/13/2018
Panelboard
Second floor, room E2-1

4005021a 9/13/2018
Lightwells and study area finishes
Room 300

4005021e 9/13/2018
Evaporator
Second floor, room E2-1

4005022a 9/13/2018
Roof and glazing on the building north side
Room 300

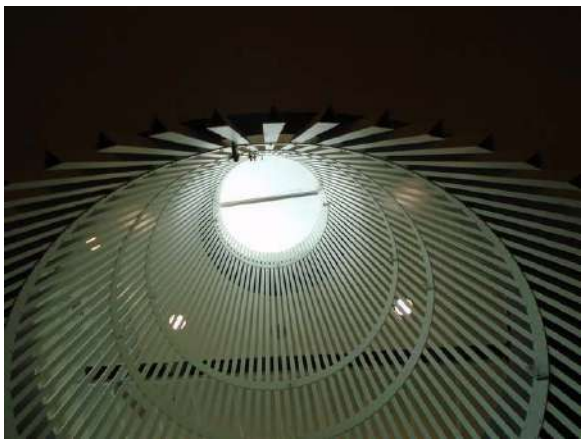
4005022e 9/13/2018
Interior lighting
Second floor, room 221

4005023a 9/13/2018
Interior finishes
Room 300

4005023e 9/13/2018
Strobe and interior lighting
Second floor, room 230

4005024a 9/13/2018
Lightwell opening on the second floor
Room 220

4005024e 9/13/2018
Interior lighting
Second floor, corridor



4005025a 9/13/2018

Lightwell and skylight above

Room 220

4005025e 9/13/2018

Interior lighting

Second floor, room 216

4005026a 9/13/2018

Second floor study area finishes

Room 220

4005026e 9/13/2018

Drain piping

Second floor, room 207

4005027a 9/13/2018

Stairwell door, hardware, and signage

Room 220

4005027e 9/13/2018

Fire extinguisher

Second floor, corridor

4005028a 9/13/2018
Ceiling detail and skylights in a typical classroom
Room 207

4005028e 9/13/2018
Fan coil unit
First floor, corridor

4005029a 9/13/2018
Interior finishes
Room 207

4005029e 9/13/2018
Evaporator
First floor, room M1-2

4005030a 9/13/2018
Utility sink
Room J2-1

4005030e 9/13/2018
Elevator machine and controller
First floor, room M1-2

4005031a 9/13/2018

Accessible room signage

Room J2-1

4005031e 9/13/2018

Annunciator

First floor, corridor

4005032a 9/13/2018

Urinals, screens, and finishes

Room T2-1

4005032e 9/13/2018

Fire alarm panels

First floor, room BDF

4005033a 9/13/2018

Lavatories and area finishes

Room T2-1

4005033e 9/13/2018

Automatic transfer switches

First floor, room E1-1

4005034a 9/13/2018
Accessible water closet
Room T2-1

4005034e 9/13/2018
Panelboard
First floor, room E1-1

4005035a 9/13/2018
Standard water closet and finishes
Room T2-2

4005035e 9/13/2018
Panelboards
First floor, room E1-1

4005036a 9/13/2018
Accessible drinking fountains
Room 224

4005036e 9/13/2018
Switchboard
First floor, room E1-1

4005037a 9/13/2018
Stairwell with compliant cane guard at low clearance location
Stair S1-2

4005037e 9/13/2018
Panelboards
First floor, room E1-1

4005038a 9/13/2018
Typical exterior exit door and hardware
Stair S1-2

4005038e 9/13/2018
Booster pump system
First floor, room M1-1

4005039a 9/13/2018
Main level interior finishes
Room 101

4005039e 9/13/2018
Evaporator
First floor, room M1-1

4005040a 9/13/2018
Main level interior finishes
Room 101

4005040e 9/13/2018
Backflow preventer
First floor, room M1-1

4005041a 9/13/2018
Break area casework and sink
Room 116

4005041e 9/13/2018
Exterior lighting
Site

4005042a 9/13/2018
Break area casework and sink
Room 116

4005042e 9/13/2018
Condensing unit
Site

4005043a 9/13/2018
Main entrance doors with hardware, signage, and powered door operators
Lobby 100

4005043e 9/13/2018
Exterior lighting
Site

4005044a 9/13/2018
Main level interior finishes
Room 120

4005044e 9/13/2018
Exterior lighting
Site

4005045a 9/13/2018
Exterior finishes and site conditions
East elevation

4005045e 9/13/2018
Exterior lighting
West elevation

4005046a 9/13/2018
Stairwell and mechanical room doors
East elevation

4005046e 9/13/2018
Exterior lighting
Site

4005047a 9/13/2018
Exterior finishes and site conditions
South elevation

4005047e 9/13/2018
Transformer
Site

4005048a 9/13/2018
South main entrance and site conditions
South elevation

4005048e 9/13/2018
Exterior lighting
South elevation

4005049a 9/13/2018
Exterior finishes and site conditions
South elevation

4005049e 9/13/2018
Exterior lighting
Site

4005050a 9/13/2018
Exterior finishes and site conditions
South elevation

4005051a 9/13/2018
Exterior finishes and site conditions
West elevation

4005052a 9/13/2018
Exterior finishes and site conditions
Northwest elevation

4005053a 9/13/2018
Exterior finishes and site conditions
North elevation

4005054a 9/13/2018

Exterior finishes and site conditions at the north main entrance

North elevation

4005055a 9/13/2018

Exterior finishes and site conditions

North elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	4005
Asset Name	Learning Commons
Year Built or Last Energy Renovation	2014

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

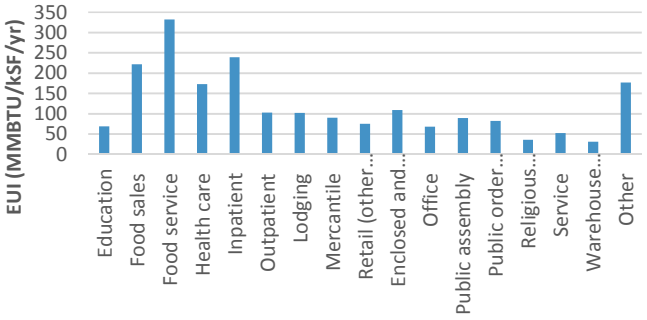
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Library
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

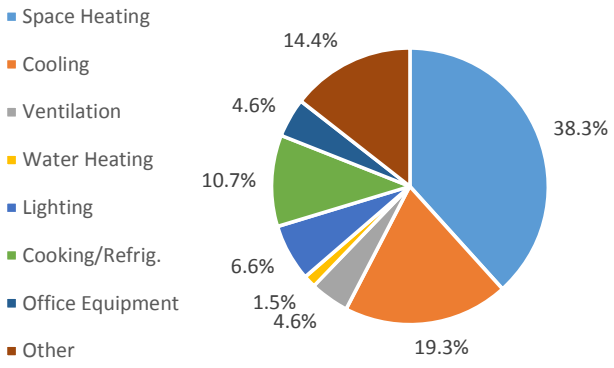


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LIBRARY	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Library



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	No ECM recommendation	

PORTLAND COMMUNITY COLLEGE

Southeast Campus

Facility Condition Assessment

Mount Scott Hall
Asset 4010

Inspected September 13, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

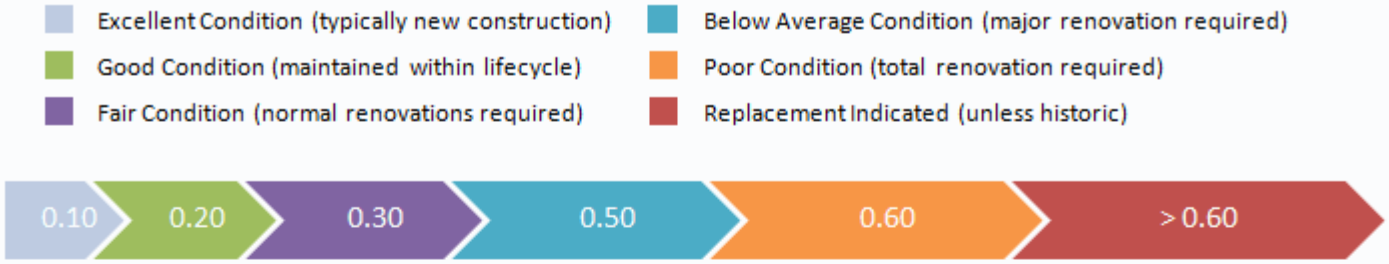
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

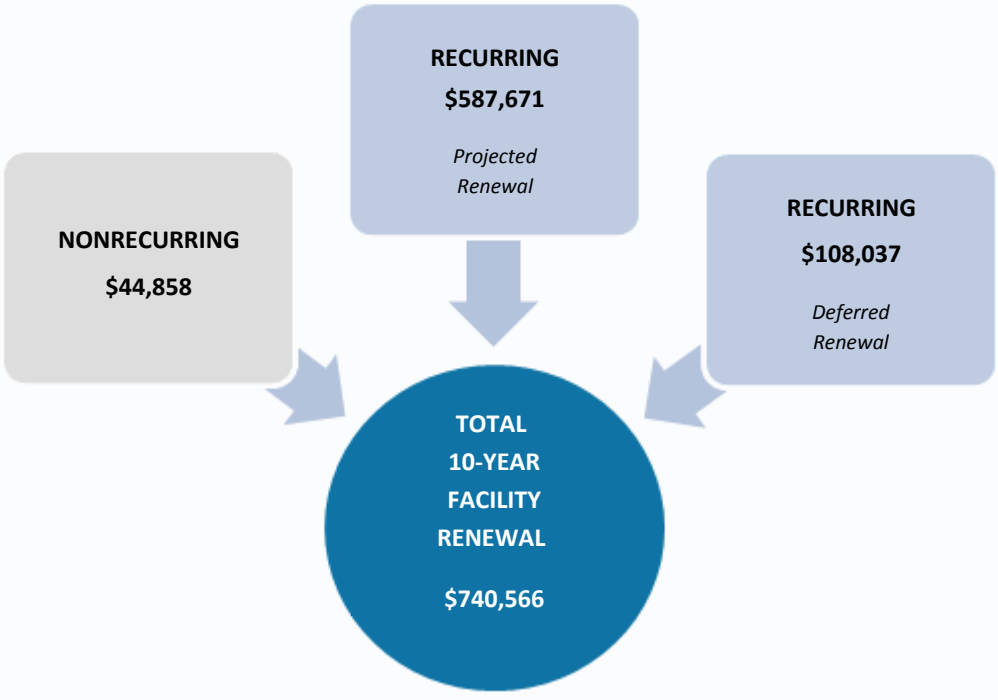
ASSET CODE	4010		
ASSET NAME	MOUNT SCOTT HALL	**CURRENT REPLACEMENT VALUE**	$8,958,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.08
YEAR BUILT	2003	**FACILITY CONDITION INDEX**	0.01
GSF	20,348	**10-YEAR $/SF**	36.40
INSPECTION DATE	09/13/2018		

FCNI Scale

The FCNI for this asset is **0.08**



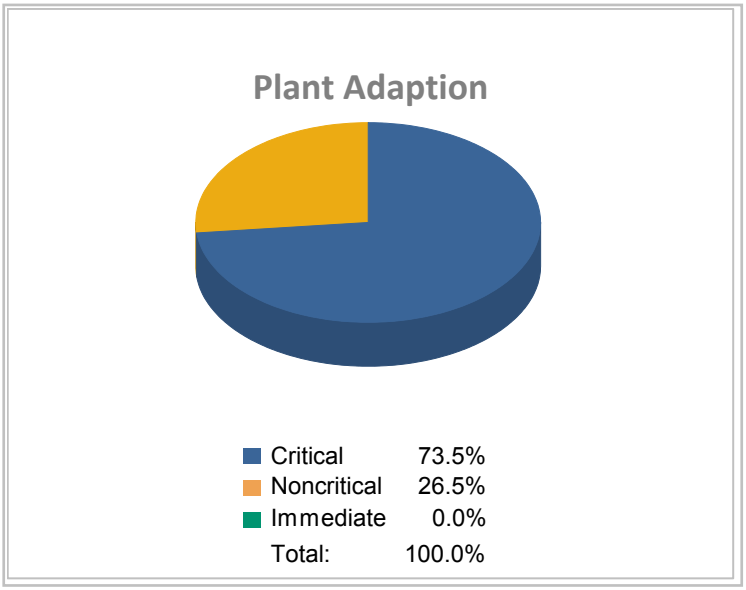
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

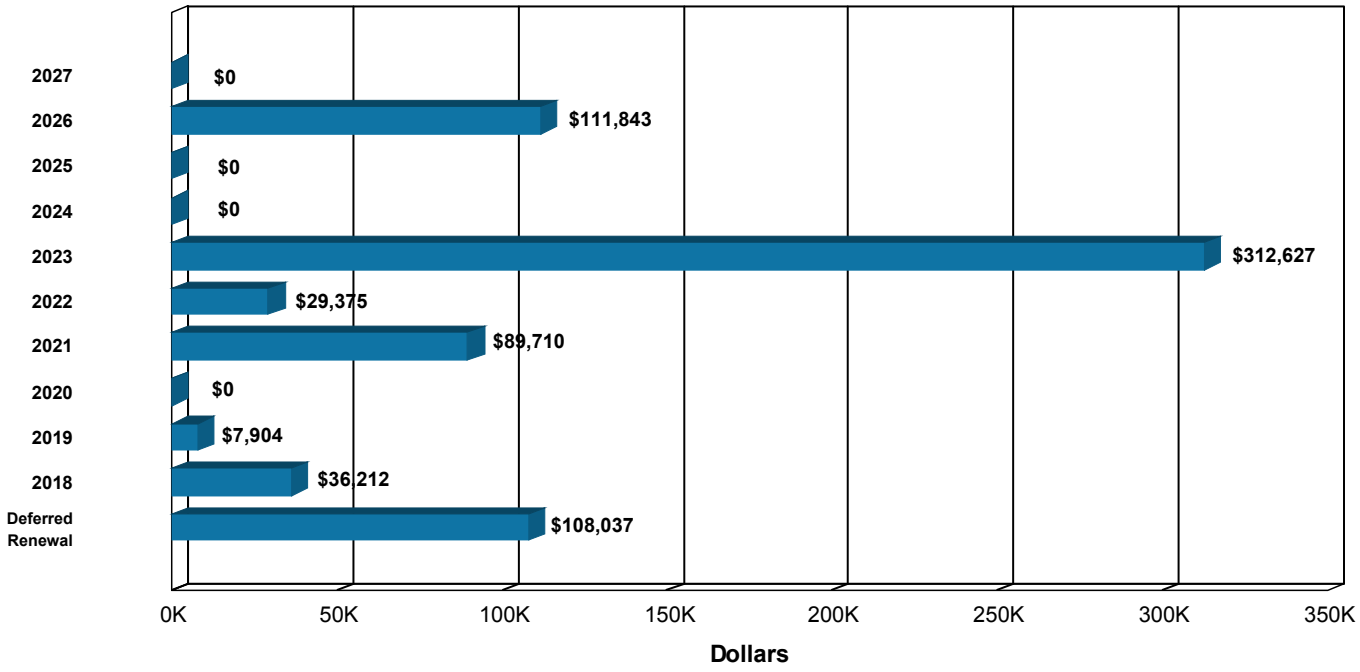
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$32,957**
3 - Noncritical	**$11,901**



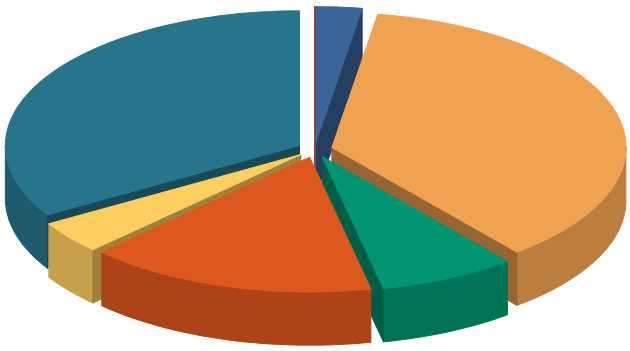
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$18,329	2%
Electrical	$271,369	37%
Exterior	$56,833	8%
Fire/Life Safety	$116,239	16%
Health	$0	0%
HVAC	$29,375	4%
Interiors	$247,711	33%
Plumbing	$710	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$740,566**	

ASSET SUMMARY

Mount Scott Hall is a two-story academic building with staff and faculty workspace supporting the Liberal Arts programs at the Portland Community College, Southeast campus. This 20,348 gross square foot structure was constructed in 2003 and includes nine general-purpose classrooms and support spaces. The exterior of this flat-roofed building is brick veneer and stucco or synthetic stucco.

Information for this report was gathered during a site visit conducted on September 13, 2018.

Site

Mount Scott Hall sits on a flat site north of the Student Commons. The building is on the west side of SE 82nd Avenue and east of Mount Tabor Hall. It is surrounded by campus concrete pedestrian walkways on three sides and on the east by city sidewalks. The sidewalks are in good condition. Parking is provided in nearby campus lots. The area around the building is well landscaped with trees, ornamental plantings, and some lawns which are in good condition.

Exterior Structure

The roof is an asphaltic, unballasted multi-ply system that is in good condition. The covered walk and bicycle storage shelters have asphaltic roof systems which will reach the end of their normal lifecycle in the next ten years and are recommended for replacement at that time. The skylights are fiberglass units which should be replaced within the next ten years. The exterior walls are brick and stucco, or synthetic stucco, and are all in good condition. The windows are metal-framed insulating glass systems and the doors are aluminum and glass storefront style units. The doors and windows are all in good condition and should outlast the scope of this report. However, the panic hardware for the doors may need to be considered for replacement.

Interior Finishes/Systems

Floor finishes are carpet, sheet vinyl, and ceramic tile. While the ceramic tile should outlast the scope of this report, the carpet and sheet vinyl are recommended for replacement during that time frame. The interior walls are painted or finished with ceramic tile. The ceramic walls are in good condition, but the painted walls are recommended for repainting within the next ten years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which should last another ten or more years. The interior doors and hardware are in good condition and no work is recommended.

Accessibility

Mount Scott Hall was constructed in compliance with accessibility requirements similar to those now in force and has few barriers to accessibility. The entrances are at grade level and some have powered door openers. The interior door hardware and signage are compliant with accessibility standards and the restrooms provide the required accessible features. The elevator has an accessible control panel, and the stairs have compliant railings. However, the dual-level drinking fountains, which are otherwise compliant, should have cane guards or alcove walls added. Also, the bottom landing of the east end stair has two steps with handrails farther apart than 60 inches An intermediate handrail should be added to make this stair compliant.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

This building has adequate exits, exit stairs, and exit access corridors. The exit pathways are clearly marked and of adequate size. Emergency lighting is provided by select light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system that incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is in excellent condition. Based on age, the system will reach the end of its service life within the report scope. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

An Aaon rooftop package unit (RTU) provides heating (natural gas) and cooling (R-22 DX refrigerant). Distribution equipment consists of metal ductwork with variable air volume (VAV) boxes and controls are a Honeywell digital application. The HVAC equipment is in adequate condition and has remaining service life, although a partial control upgrade may need to be considered on a low priority basis. Cooling is also provided by two split systems in select rooms. Charged with DX refrigerant, they are in good condition with no recommendations. Facility exhaust is provided by two rooftop centrifugal fans

and two inline centrifugal fans. The fans serve restrooms, mechanical spaces, and general exhaust needs. They are in adequate condition and believed to be original. Based on age, the fans have remaining service life.

Electrical

Power is supplied via underground utilities at 480/277 volts to a 600 amp main panelboard in room E1-01. Power is then supplied directly to panelboards or stepped down to 120/208 volts via a dry-type transformer. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The distribution system appears to be well marked and properly encased. The electrical equipment has substantial remaining service life. Emergency power is provided from Mount Tabor Hall. This is an adequate application with no recommendations.

The interior lighting consists of suspended and lay-in fixtures equipped with acrylic, parabolic, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The original interior lighting appears to be in good condition and, based on age, will reach the end of its normal lifecycle within the next ten years.

The exterior lighting consists of eave-mounted recessed fixtures at the entryways. Additional lighting is provided by pole-mounted fixtures on the site, ground-mounted HID fixtures, adjacent facilities, and the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, some of the exterior lighting may need to be scheduled for replacement due to lifecycle depletion.

Variable frequency drives control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the supply fan in the package unit and the return fan. They are original and approaching the end of their service life.

Plumbing

Domestic water is supplied through a copper piping network and drain piping is cast-iron with no hub connections and some plastic applications. The piping systems, where they could be viewed, are in good condition. Based on age, they have remaining service life beyond the scope of this report.

Domestic hot water is provided by a commercial-grade electric water heater with a tank capacity of 30 gallons. A small pump and expansion tank support the water heater. The domestic water heating equipment is in adequate condition and has remaining service life. A sump pump serves the elevator pit and is estimated to date to 2003. Based on age, it will reach the end of its service life in the next few years.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, and utility sinks. All of these fixtures are in good condition, within their normal lifecycle, and should last another ten or more years.

Vertical Transportation

This two-story facility has a ThyssenKrupp hydraulic passenger elevator with a car capacity of 3,000 pounds and controlled by a MCE nonproprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection. The unit was placed into service in 2003 and should outlast the scope of this report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
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carlm@isescorp.com

Date of Inspection

September 13, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	6,428	11,901	0	0	0	0	0	0	0	0	0	0	0	$18,329
EXTERIOR	0	0	0	4,748	0	0	0	0	0	52,085	0	0	0	0	$56,833
INTERIOR	0	0	0	103,289	32,579	0	0	0	0	0	0	0	111,843	0	$247,711
PLUMBING	0	0	0	0	0	0	0	0	0	710	0	0	0	0	$710
HVAC	0	0	0	0	0	0	0	0	29,375	0	0	0	0	0	$29,375
FIRE/LIFE SAFETY	0	26,529	0	0	0	0	0	89,710	0	0	0	0	0	0	$116,239
ELECTRICAL	0	0	0	0	3,633	7,904	0	0	0	259,832	0	0	0	0	$271,369
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$32,957	$11,901	$108,037	$36,212	$7,904	$0	$89,710	$29,375	$312,627	$0	$0	$111,843	$0	$740,566
TOTAL NONRECURRING PROJECT NEEDS			$44,858	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$695,708	

CURRENT REPLACEMENT VALUE	$8,958,000
FACILITY CONDITION NEEDS INDEX	0.08
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
20,348	$740,566	$36.40

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$18,329	$0	$18,329
EXTERIOR	$0	$56,833	$56,833
INTERIOR	$0	$247,711	$247,711
PLUMBING	$0	$710	$710
HVAC	$0	$29,375	$29,375
FIRE/LIFE SAFETY	$26,529	$89,710	$116,239
ELECTRICAL	$0	$271,369	$271,369
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$44,858**	**$695,708**	**$740,566**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
4010FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	26,529
4010AC01	EAST STAIR HANDRAIL UPGRADE	C2010	2	Plant Adaption	6,428
4010AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	11,901
				TOTAL	**$44,858**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4010	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	4,748
4010	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2003 INSTALL			C3020	Deferred Renewal	103,289
4010	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2018	32,579
4010	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RF-5	0000003842	E1-01	D5010	2018	3,633
4010	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SUP FAN	0000003816	ROOF	D5010	2019	7,904
4010	FA01	FIRE ALARM SYSTEM - DEVICES			BDF1-01	D4030	2021	87,456
4010	FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		BDF1-01	D4030	2021	2,254
4010	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2022	19,182
4010	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2022	10,193
4010	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			B2030	2023	6,770
4010	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			B2030	2023	13,541
4010	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	BICYCLE PARKING			B3010	2023	6,104
4010	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	COVERED WALK			B3010	2023	19,882
4010	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				B3020	2023	5,787
4010	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			ELEV PIT	D2030	2023	710
4010	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2023	1,017

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4010	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	GRND-MOUNT		SITE	D5020	2023	1,543
4010	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2023	5,006
4010	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	2023	228,501
4010	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2023	23,765
4010	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	85,991
4010	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			C3020	2026	25,852
							TOTAL	**$695,708**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	4010FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$26,529
2	4010AC01	EAST STAIR HANDRAIL UPGRADE	2	$6,428
3	4010AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$11,901
		TOTAL FOR PLANT ADAPTION		**$44,858**
		GRAND TOTAL:		**$44,858**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	4010AC01	2	Plant Adaption	EAST STAIR HANDRAIL UPGRADE	$6,428
3	4010AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$11,901
				TOTAL FOR ACCESSIBILITY	**$18,329**
1	4010FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$26,529
				TOTAL FOR FIRE/LIFE SAFETY	**$26,529**
				GRAND TOTAL:	**$44,858**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	4010FS01	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/15/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	24	$304	$7,296	$488	$11,712	$19,008
Base Material/Labor Costs				**$7,296**		**$11,712**	
Indexed Material/Labor Costs				**$7,252**		**$11,806**	**$19,058**
Construction Mark Up at 20.0%							**$3,812**
Original Construction Cost							**$22,869**
Date of Original Estimate: 11/15/2018						**Inflation**	**$0**
Current Year Construction Cost							**$22,870**
Professional Fees at 16.0%							**$3,659**
TOTAL PROJECT COST							**$26,529**

All costs shown as Present Value

EAST STAIR HANDRAIL UPGRADE

Project Number:	4010AC01	**Category Code:**	AC3B
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/15/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 505	Not Applicable	Undefined: Floor(s) 1

Description

Current accessibility and life/safety codes require that the distance between handrails on a stair should not exceed 60 inches. The bottom landing of the east end stair has two steps with handrails farther apart than 60 inches An intermediate handrail should be added to make this stair compliant.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted	LF	15	$116	$1,741	$191	$2,865	$4,606
Base Material/Labor Costs				**$1,741**		**$2,865**	
Indexed Material/Labor Costs				**$1,730**		**$2,888**	**$4,618**
Construction Mark Up at 20.0%							**$924**
Original Construction Cost							**$5,542**
Date of Original Estimate: 11/15/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,542**
Professional Fees at 16.0%							**$887**
TOTAL PROJECT COST							**$6,428**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	4010AC02	**Category Code:** AC3F	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/15/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Dual-level drinking fountains, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	2	$932	$1,865	$3,321	$6,643	$8,508
			Base Material/Labor Costs	**$1,865**		**$6,643**	
			Indexed Material/Labor Costs	**$1,853**		**$6,696**	**$8,550**
					Construction Mark Up at 20.0%		**$1,710**
					Original Construction Cost		**$10,259**
Date of Original Estimate: 11/15/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$10,259**
					Professional Fees at 16.0%		**$1,642**
					TOTAL PROJECT COST		**$11,901**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				6,500	SF	1.12	$87,569	2003	30		2033
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				400	SF	1.12	$921	2003	30		2033
WN03	GLASS, CURTAIN WALL, STANDARD				1,890	SF	1.12	$358,235	2003	60		2063
WN05	GLASS, STOREFRONT				1,890	SF	1.12	$266,841	2003	40		2043
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				4	LEAF	1.00	$12,089	2003	25		2028
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			1	EA	1.00	$6,770	2003	20		2023
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			2	EA	1.00	$13,541	2003	20		2023
DR36	DOOR PANIC HARDWARE, EXTERIOR				4	EA	1.00	$4,748	2003	12	2	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	COVERED WALK			1,140	SF	1.00	$19,882	2003	20		2023
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	BICYCLE PARKING			350	SF	1.00	$6,104	2003	20		2023
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				10,250	SF	1.00	$214,302	2003	30		2033
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				96	SF	1.00	$5,787	2003	20		2023
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				20	LEAF	1.00	$44,229	2003	60		2063
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	PANIC HDW			2	LEAF	1.00	$4,423	2003	60		2063
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			20	LEAF	1.00	$73,371	2003	60		2063

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			20	EA	1.00	$15,058	2003	35		2038
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			20	EA	1.00	$15,058	2003	35		2038
DR26	DOOR PANIC HARDWARE, INTERIOR				2	EA	1.00	$2,374	2003	30		2033
IW01	WALL FINISH - APPLIED, STANDARD				30,810	SF	1.00	$85,991	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				630	SF	1.00	$25,516	2003	60		2063
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2003 INSTALL			8,670	SF	1.00	$103,289	2003	12	2	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			2,170	SF	1.00	$25,852	2014	12		2026
IF04	FLOORING - VINYL SHEET, STANDARD				2,890	SF	1.00	$32,579	2003	15		2018
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				720	SF	1.00	$25,392	2003	40		2043
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				9,820	SF	1.00	$109,298	2003	45		2048
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	PERFORATED WOOD			2,460	SF	1.00	$33,228	2003	45		2048
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				2,170	SF	1.00	$6,056	2003	24	1	2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	TK/MCE	0000004398	M2-1	1	EA	1.00	$257,984	2003	25		2028
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	1.00	$5,388	2003	25		2028
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				12	EA	1.00	$10,328	2003	25		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX10	PLUMBING FIXTURE - URINAL				2	EA	1.00	$2,157	2003	35		2038
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				10	EA	1.00	$16,950	2003	35		2038
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				20,348	SF	1.00	$233,003	2003	50		2053
TK06	EXPANSION TANK, STL PT (<20 GAL)		0000003829	100A	5	GAL	1.00	$504	2003	30		2033
WH11	WATER HEATER - COMMERCIAL, ELECTRIC (<=30 GAL)	EWH-1	0000003828	100A	30	GAL	1.00	$24,078	2003	30		2033
PD02	DRAIN PIPING SYSTEM - CLASSROOM				20,348	SF	1.00	$349,585	2003	60		2063
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			ELEV PIT	1	EA	1.00	$710	2003	20		2023
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-6	0000003815	ROOF	3	TON	1.00	$6,869	2003	25		2028
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DAIKEN	0000005404	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	AC-6	0000003849	E1-01	3	TON	1.00	$5,611	2003	30		2033
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DAIKEN	0000005403	BDF1-01	3	TON	1.00	$5,611	2014	30		2044
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-14	0000003813	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	RF-5	0000003812	ROOF	1	EA	1.00	$8,436	2003	25		2028
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-20	0000003850	E2-01	1	HP	1.00	$1,321	2003	35		2038
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-16		E2-01	1	HP	1.00	$1,321	2003	35		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				20,348	SF	1.00	$723,864	2003	45		2048
PH01	PUMP - ELECTRIC (<=10 HP)	CIRC PUMP 7	0000003817	209	1	HP	1.00	$1,693	2003	30		2033
HU39	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (55-70 TON)	AAON	0000003814	ROOF	60	TON	1.00	$267,803	2003	25		2028
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				20,348	SF	1.00	$68,934	2012	20		2032
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				20,348	SF	1.00	$19,182	2012	10		2022
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				20,348	SF	1.00	$10,193	2012	10		2022
FS01	FIRE SPRINKLER SYSTEM - WET				20,348	SF	1.00	$275,281	2003	80		2083
FA01	FIRE ALARM SYSTEM - DEVICES			BDF1-01	20,348	SF	1.00	$87,456	2003	18		2021
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		BDF1-01	1	EA	1.00	$2,254	2003	18		2021
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		BDF1-01	1	EA	1.00	$13,857	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				20,348	SF	1.00	$505,304	2003	50		2053
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	DPHD1A	0000003843	E1-01	600	AMP	0.15	$7,089	2003	40		2043
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RF-5	0000003842	E1-01	5	HP	1.00	$3,633	2003	15		2018
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SUP FAN	0000003816	ROOF	20	HP	1.00	$7,904	2003	16		2019
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			2	EA	1.00	$1,017	2003	20		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	GRND-MOUNT		SITE	2	EA	1.00	$1,543	2003	20		2023
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	4	EA	1.00	$7,790	2003	40		2043
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	4	EA	1.00	$5,006	2003	20		2023
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				20,348	SF	1.00	$228,501	2003	20		2023
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				10,348	SF	1.00	$23,765	2003	20		2023
							Grand Total:	**$4,801,070**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR PANIC HARDWARE, EXTERIOR		4	EA	$4,748	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2003 INSTALL	8,670	SF	$103,289	DR
				TOTAL DEFERRED RENEWAL COST	$108,037	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - VINYL SHEET, STANDARD		2,890	SF	$32,579	2018
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	RF-5	5	HP	$3,633	2018
	2018	PROJECTED COMPONENT REPLACEMENT COST			$36,212	

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	SUP FAN	20	HP	$8,141	2019
	2019	PROJECTED COMPONENT REPLACEMENT COST			$8,141	

No Projected Component Replacement Cost for Asset No. 4010 for 2020

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	1	EA	$2,463	2021
D4030	FIRE ALARM SYSTEM - DEVICES		20,348	SF	$95,566	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$98,029	

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		20,348	SF	$11,472	2022
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		20,348	SF	$21,590	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$33,062	

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	COVERED WALK	1,140	SF	$23,049	2023
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	BICYCLE PARKING	350	SF	$7,076	2023
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL		96	SF	$6,709	2023
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR	1	EA	$7,849	2023
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR	2	EA	$15,697	2023
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		20,348	SF	$264,896	2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		10,348	SF	$27,550	2023
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	2	EA	$1,179	2023
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	GRND-MOUNT	2	EA	$1,789	2023
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		4	EA	$5,803	2023
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)		1	EA	$823	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$362,420**	

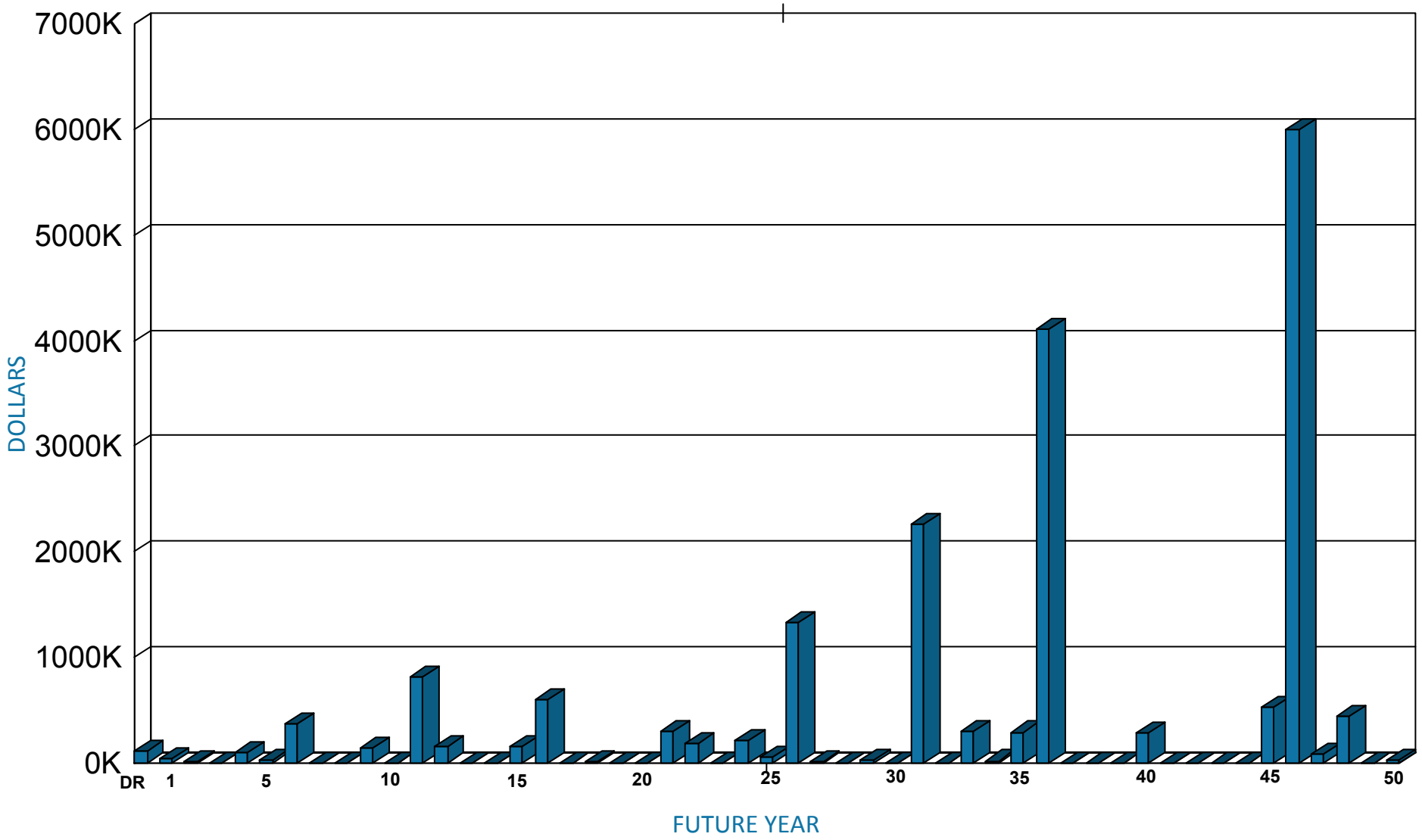
No Projected Component Replacement Cost for Asset No. 4010 for 2024

No Projected Component Replacement Cost for Asset No. 4010 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL	2,170	SF	$32,748	2026
C3010	WALL FINISH - APPLIED, STANDARD		30,810	SF	$108,931	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$141,679**	

No Projected Component Replacement Cost for Asset No. 4010 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.10

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

AC01

AC02

MOUNT
SCOTT
HALL

BLDG NO. 4010

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

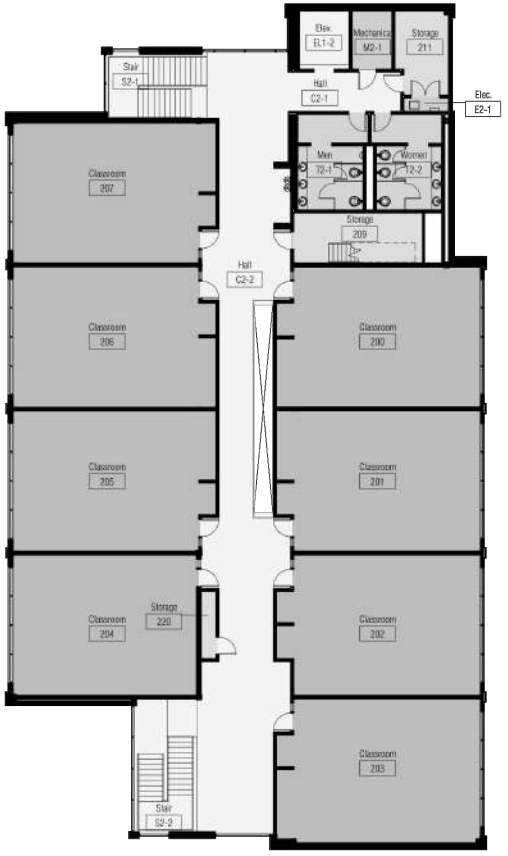
Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF
FS01



AC02

MOUNT
SCOTT
HALL

BLDG NO. 4010

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

SECOND
FLOOR
PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

4010001a 9/13/2018

Typical corridor finishes

Hall C1-1

4010001e 9/13/2018

Car operating panel

Elevator cab

4010002a 9/13/2018

Accessible elevator control panel

Elevator

4010002e 9/13/2018

Elevator controller

Second floor, room M2-1

4010003a 9/13/2018

Roof drain and overflow drain

Roof

4010003e 9/13/2018

Elevator machine

Second floor, room M2-1

4010004a 9/13/2018

Skylight

Roof

4010004e 9/13/2018

Return fan

Roof

4010005a 9/13/2018

Roof-mounted equipment

Roof

4010005e 9/13/2018

Exhaust fan

Roof

4010006a 9/13/2018

Surface deterioration of roof membrane

Roof

4010006e 9/13/2018

Condensing unit

Roof

4010007a 9/13/2018
Roof edges without required fall protection
Roof

4010007e 9/13/2018
Condensing unit
Roof

4010008a 9/13/2018
Roof edges without required fall protection
Roof

4010008e 9/13/2018
Air handling unit
Roof

4010009a 9/13/2018
Mechanical equipment screen wall
Roof

4010009e 9/13/2018
VFD
Roof

4010010a 9/13/2018

Roof access with guardrails

Roof

4010010e 9/13/2018

HVAC control panel

Roof

4010011a 9/13/2018

Roof access stair with compliant railings

Room 209

4010011e 9/13/2018

Pump and piping

Second floor, room 209

4010012a 9/13/2018

Stair with compliant railings

Stair S2-1

4010012e 9/13/2018

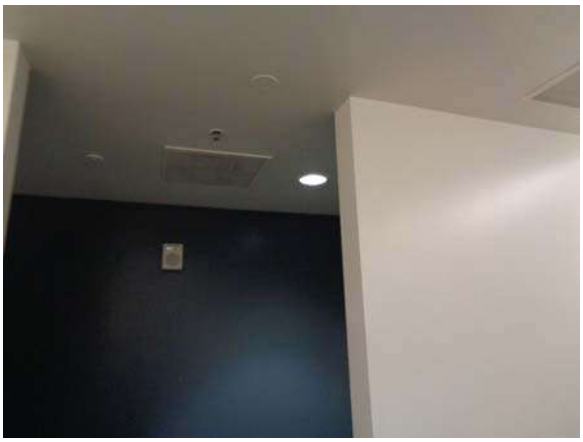
Interior lighting

Second floor, men's restroom

4010013a 9/13/2018
Lavatories and area finishes
Room T2-1

4010013e 9/13/2018
Piping
Second floor, men's restroom chase

4010014a 9/13/2018
Urinal and partition
Room T2-1



4010014e 9/13/2018
Strobe
Second floor, men's restroom

4010015a 9/13/2018
Accessible stall, water closet, and accessories
Room T2-1

4010015e 9/13/2018
Exhaust fan
Second floor, room E2-01

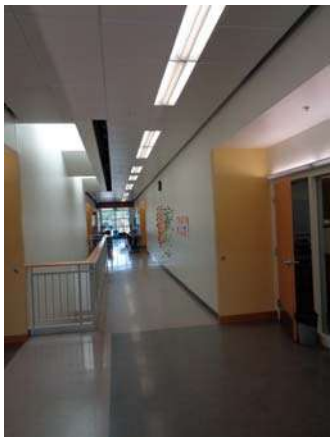
4010016a 9/13/2018
Standard stall and water closet
Room T2-2

4010016e 9/13/2018
Transformer and panelboard
Second floor, room E2-01

4010017a 9/13/2018
Accessible stall, water closet, and accessories
Room T2-2

4010017e 9/13/2018
Fire extinguisher and strobe
Second floor, corridor

4010018a 9/13/2018
Typical classroom finishes
Room 207



4010018e 9/13/2018
Interior lighting
Second floor, corridor

4010019a 9/13/2018

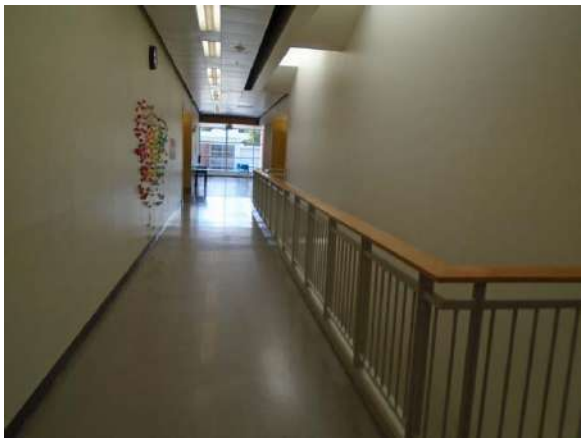
Damaged carpet

Room 206

4010019e 9/13/2018

Interior lighting

Second floor, room 207



4010020a 9/13/2018

Skylights and light well

Hall C2-2

4010020e 9/13/2018

Digital thermostat

Second floor, room 207

4010021a 9/13/2018

Corridor ceiling and skylight openings

Hall C2-2

4010021e 9/13/2018

Pull station

First floor, corridor

4010022a 9/13/2018
Study area at the east stairwell
Hall C2-2

4010022e 9/13/2018
Interior lighting
First floor, room 105

4010023a 9/13/2018
Ceiling wall and floor finishes
Hall C2-2

4010023e 9/13/2018
Interior lighting
First floor, room 102

4010024a 9/13/2018
Curtain wall system at the east stairwell
Stair S2-2

4010024e 9/13/2018
Interior lighting
First floor, room 106A

4010025a 9/13/2018

Detail at the curtain wall system

Stair S2-2

4010025e 9/13/2018

Sprinkler piping

First floor, room 100A

4010026a 9/13/2018

Accessible drinking fountains without required side protection

Hall C2-2

4010026e 9/13/2018

Water heater

First floor, room 100A

4010027a 9/13/2018

Skylight

Hall C2-2

4010027e 9/13/2018

Annunciator

First floor, corridor

4010028a 9/13/2018
Stair without required handrail
Stair S1-2

4010028e 9/13/2018
Panelboards
First floor, room E1-01

4010029a 9/13/2018
Building entrance vestibule doors and hardware
Vestibule V1-1

4010029e 9/13/2018
VFD
First floor, room E1-01

4010030a 9/13/2018
Typical office area finishes
Room 103

4010030e 9/13/2018
Panelboards
First floor, room E1-01

4010031a 9/13/2018

Compliant signage

Room 103

4010031e 9/13/2018

Wheelock panel

First floor, room BDF1-01

4010032a 9/13/2018

Light well in the first floor corridor

Hall C1-1

4010032e 9/13/2018

Panelboard

First floor, room BDF1-01

4010033a 9/13/2018

Corridor finishes on the first floor

Hall C1-1

4010033e 9/13/2018

Evaporator

First floor, room BDF1-01

4010034a 9/13/2018

Office area finishes

Room 106

4010034e 9/13/2018

Exterior lighting

West elevation

4010035a 9/13/2018

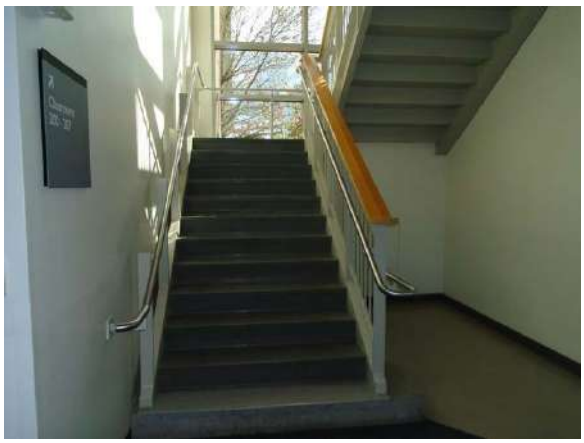
Accessible drinking fountains without required side protection

Hall C1-1

4010035e 9/13/2018

Exterior lighting

Site



4010036a 9/13/2018

Stair with compliant handrails

Stair S1-1

4010036e 9/13/2018

Exterior lighting

East elevation

4010037a 9/13/2018
West entrance door and hardware
Hall C1-1

4010037e 9/13/2018
Exterior lighting
Site

4010038a 9/13/2018
Urinal and partition
Room T1-1

4010038e 9/13/2018
Exterior lighting
Site

4010039a 9/13/2018
Lavatories and area finishes
Room T1-1

4010039e 9/13/2018
Exterior lighting
Site

4010040a 9/13/2018
Accessible stall, water closet, and accessories
Room T1-1

4010041a 9/13/2018
Standard stall and water closet
Room T1-2

4010042a 9/13/2018
Accessible stall, water closet, and accessories
Room T1-2

4010043a 9/13/2018
Covered walk connection to Mt. Tabor Hall
West elevation

4010044a 9/13/2018
Covered walk and exterior finishes
West elevation

4010045a 9/13/2018
Covered walk roof
Roof

4010046a 9/13/2018
Covered walk at the west entrance
West elevation

4010047a 9/13/2018
Exterior finishes and site conditions
Southwest elevation

4010048a 9/13/2018
Exterior finishes and site conditions
South elevation

4010049a 9/13/2018
Site between Mt Scott and the Student Commons
South elevation

4010050a 9/13/2018
Accessible ramped entrance
East elevation

4010051a 9/13/2018
Exterior finishes and site conditions
East elevation

4010052a 9/13/2018

Exterior finishes at the east entrance

East elevation

4010053a 9/13/2018

Exterior finishes

East elevation

4010054a 9/13/2018

Exterior finishes and site conditions

North elevation

4010055a 9/13/2018

Covered bicycle parking area

North elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	4010
Asset Name	Mount Scott Hall
Year Built or Last Energy Renovation	2003

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

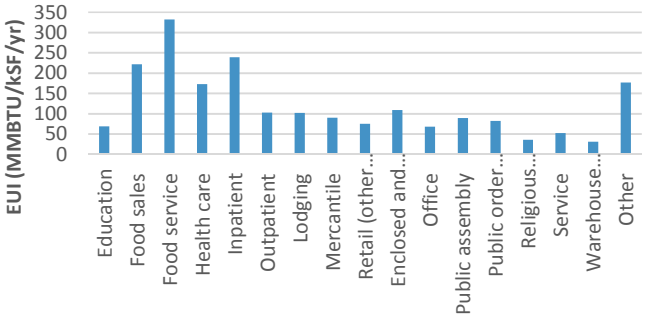
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Library
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

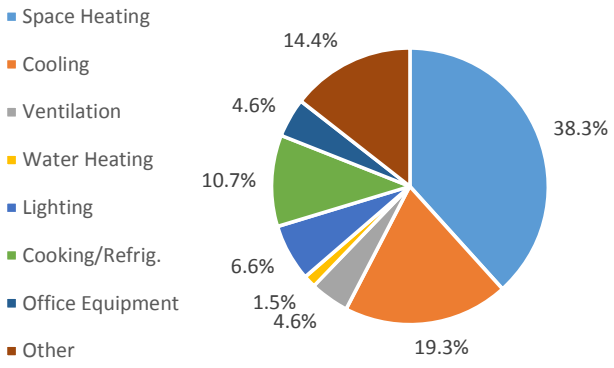


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LIBRARY	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Library



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Southeast Campus

Facility Condition Assessment

Mount Tabor Hall
Asset 4020

Inspected September 13, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

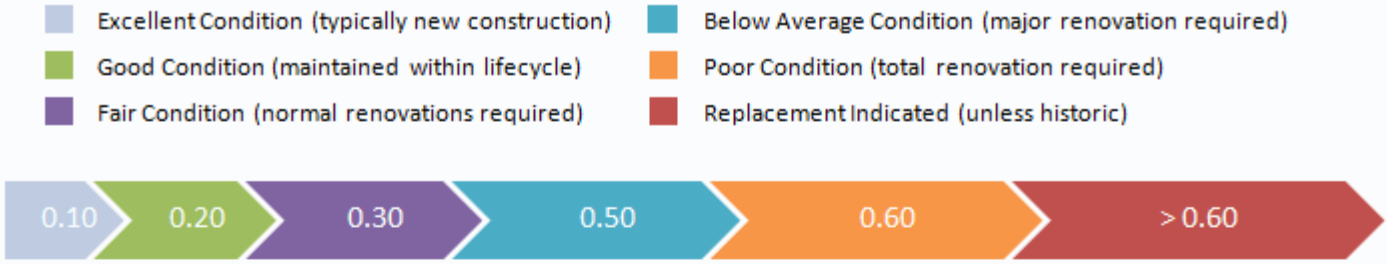
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

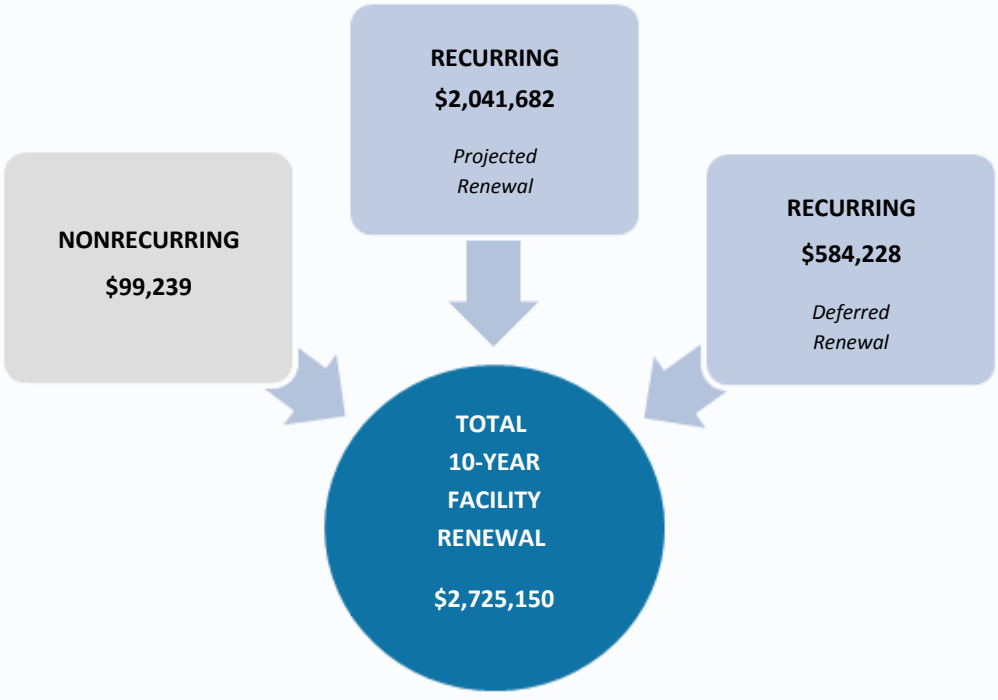
ASSET CODE	4020		
ASSET NAME	MOUNT TABOR HALL	**CURRENT REPLACEMENT VALUE**	$29,152,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.09
YEAR BUILT	2003	**FACILITY CONDITION INDEX**	0.02
GSF	73,733	**10-YEAR $/SF**	36.96
INSPECTION DATE	09/13/2018		

FCNI Scale

The FCNI for this asset is **0.09**



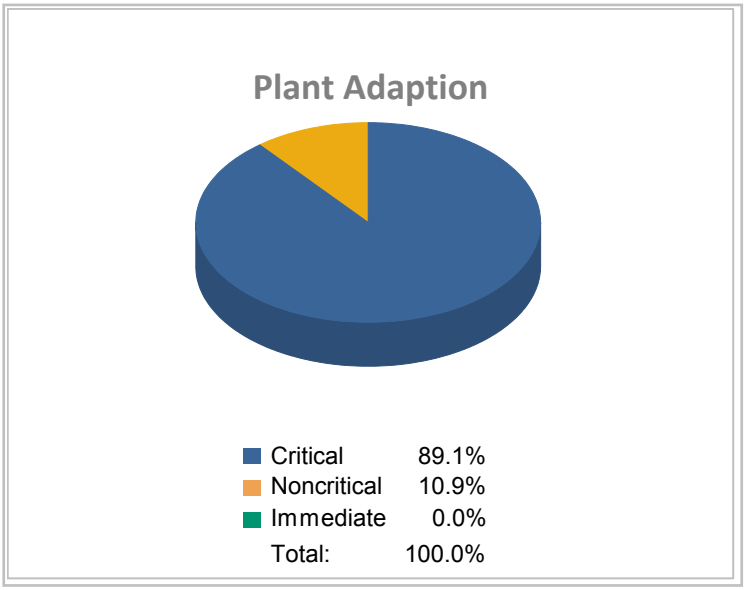
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

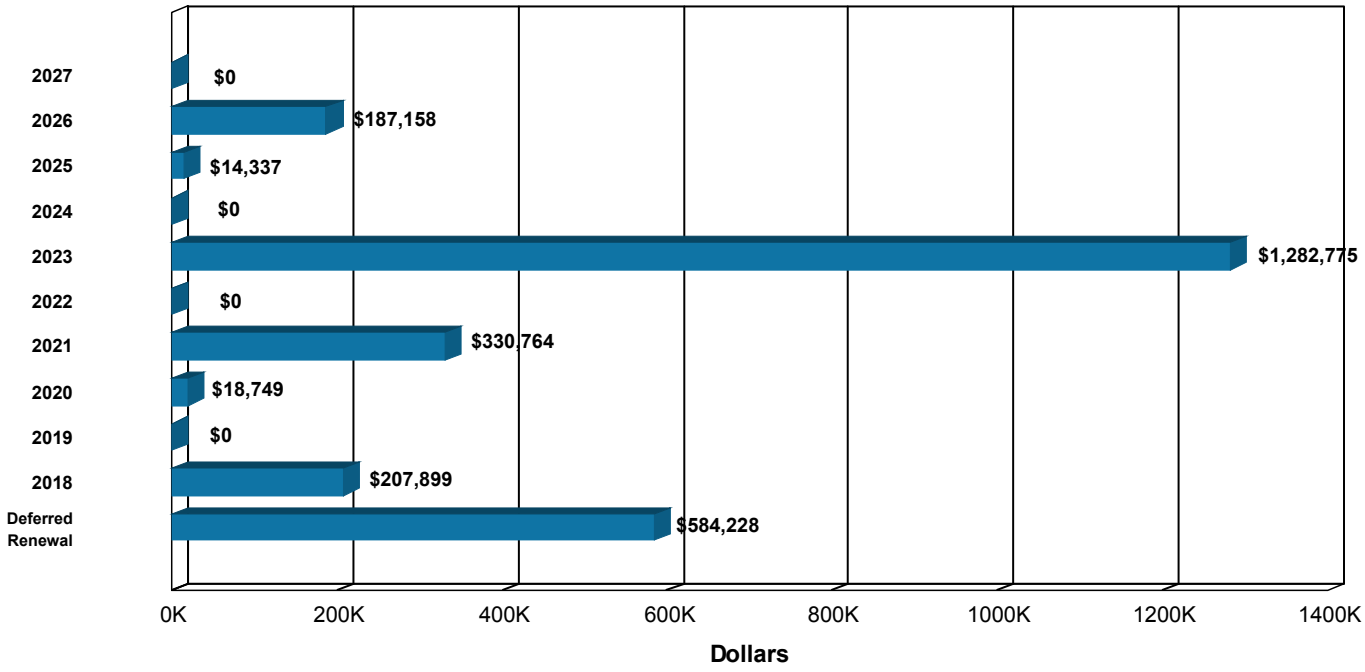
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$88,429**
3 - Noncritical	**$10,810**



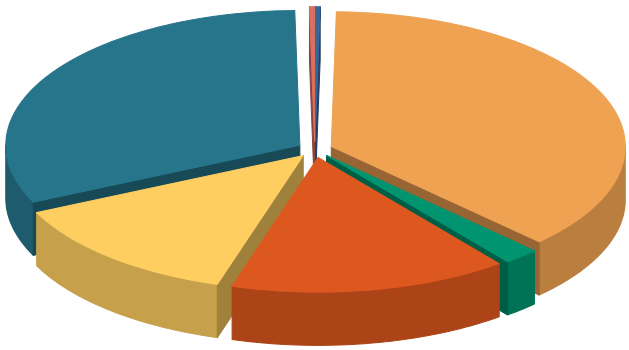
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$10,810	0%
Electrical	$1,014,002	37%
Exterior	$47,000	2%
Fire/Life Safety	$419,193	15%
Health	$0	0%
HVAC	$367,136	13%
Interiors	$856,892	31%
Plumbing	$10,116	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$2,725,150**	

ASSET SUMMARY

Mount Tabor Hall is a 73,733 square-foot academic building on the Southeast campus of Portland Community College. Originally constructed as a commercial or retail facility, the building was converted in 2003 for use as food service and dining areas, spaces for student clubs, student government offices, study/lounge areas, flexible meeting space, fitness areas, and classrooms. The building has flat roofs and stucco, metal panel, and brick exterior finishes.

Information for this report was gathered during a site visit conducted on September 13, 2018.

Site

The site is a flat parcel north of the Learning Commons and west of Mount Scott Hall. It is surrounded by concrete pedestrian walkways which are in good condition. A campus drive just west of this building provides limited service access, and parking for users is provided in nearby campus lots. The area around the building is well landscaped with trees, ornamental plantings, and some lawn areas. A service dock on the northwest, and a service court on the southwest side of the building provide vehicular service access.

Exterior Structure

The roof membranes are asphaltic systems with a reflective coating and appear to be in good condition for their age. They should last another ten years but are in need of cleaning and spot recoating where some surface cracking has begun to show. The skylights over corridor C1-2 are in good condition and no work is anticipated at this time. Exterior walls are brick veneer, metal panel systems, and stucco, all in good condition. The windows are metal-framed insulating glass storefront and curtain wall style systems, also in good condition. The aluminum and glass storefront, flush hollow-metal, and overhead coiling steel doors should last another ten or more years, but the associated hardware may need to be upgraded.

Interior Finishes/Systems

The floor finishes include carpet, welded-seam resilient flooring, sheet vinyl, ceramic tile, and polished, sealed concrete. The carpet, sealed floors, and much of the sheet vinyl will reach the end of their expected lifecycles in the next ten years and should be replaced or renewed. The newer sheet vinyl and the ceramic tile should outlast the scope of this report. The interior walls are finished in wood, paint, and ceramic tile. The tile and wood paneling should last beyond the next ten years, but it is recommended that the painted walls be repainted within the next few years. The ceilings are painted hard surfaces and suspended wood panel and acoustical tile systems, all of which are in good condition. The interior doors and casework are also in good condition and no work is recommended.

Accessibility

This building was completely renovated in 2003 in compliance with the accessibility requirements at that time. The entrances are at grade level and some have powered door openers. The door hardware and most of the room signage is compliant with accessibility standards and the restrooms provide the required accessible features. However, the dual-level drinking fountains near room 115, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added. Additionally, current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all missing and noncompliant signage be upgraded to conform to the appropriate accessibility standards.

Health

The commercial kitchen is clean and well maintained. The equipment is anticipated to last beyond the scope of this report. Additionally the three walk-in coolers/freezer systems supporting the needs of the kitchen were installed in 2003. The mechanical components were upgraded in the last ten years and the equipment has remaining service life beyond the scope of this report.

Emergency eyewash stations are available in the event of a mishap. The units appear to be properly maintained and are in good condition.

Fire/Life Safety

This building has adequate exit access corridors and the exit pathways are clearly marked and of adequate size. Emergency lighting is provided by select overhead light fixtures tied to the emergency power network. This is an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system with the main panel in a datacom room. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to date to 2003. It will reach the end of its service life within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two Weil-McLain gas-fired boilers were installed in 2017 to provide heating hot water. An expansion tank supports the heating system. Cooling to the facility is partially provided by a cooling tower that utilizes a plate-and-frame heat exchanger and serves select air handling units (AHUs). The cooling tower is original and provides 227 tons of cooling. Pumps provide circulation of the hot and chilled water throughout. This HVAC equipment is in adequate condition and has remaining service life.

Two indoor package AHUs provide tempered air and are connected to the cooling tower. Distribution equipment consists of metal ductwork with variable air volume (VAV) boxes with reheat coils. Controls are a Honeywell digital application. There are also four, new makeup air units for the large kitchen. Additionally, there are two rooftop package units charged with DX refrigerant and using natural gas. The HVAC equipment is in adequate condition and has remaining service life. However, the controls should be scheduled for replacement over the scope of this report. Cooling is also provided by several split systems in IT and electrical rooms as well as mechanical spaces. These units are charged with DX refrigerant and were installed at various times. The split systems are in good condition and have remaining service life.

Facility exhaust is provided by rooftop centrifugal fans and propeller type fans. The fans serve restrooms, mechanical spaces, electrical spaces, and kitchen hoods. Most of the fans were installed in 2003 with some units replaced in 2013. While most of the exhaust equipment has substantial remaining service life, some of the propeller type fans will reach lifecycle depletion in the next few years. The kitchen hoods are well maintained and in good condition. They have remaining service life beyond the scope of this report.

Electrical

Power is supplied to the facility at 480/277 volts via underground utilities. The power energizes a 2,500 amp Square D main switchboard that appears to be in adequate condition and well maintained. The unit has remaining service life beyond the scope of this report.

The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The electrical distribution system appears to be well marked and properly encased.

The interior lighting consists of suspended, lay-in, and surface-mounted fixtures equipped with acrylic, parabolic, or no lenses. The lighting is lamped with T8 fluorescent bulbs. Additional lighting is provided by suspended HID fixtures. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be good condition and is estimated to date to 2003. Based on age, the system will reach the end of its service life within the next ten years.

The exterior lighting consists of recessed eave-mounted non-HID fixtures, pole-mounted fixtures on the site, a wall-mounted HID fixture, and bollard-style fixture on the site. Lighting is also provided from

adjacent facilities. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, the lighting may need to be scheduled for replacement due to lifecycle depletion.

Emergency power is provided by a Kohler diesel-fired generator that provides power at 480/277 volts and has a capacity rating of 200 kW. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears well maintained and in good condition.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The VFDs serve the air handling units, return fans, pumps, and a cooling tower. They vary in age and most will reach lifecycle depletion within the scope of this report.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers on the water systems prevent cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems appear to be in good condition and no issues were reported. The systems have remaining service life beyond the scope of this report. However, the backflow preventers will reach the end of their service life over the scope of this report.

Domestic hot water is provided by two A.O. Smith commercial-grade, gas-fired water heaters and an electric water heater. The water heaters were installed at various times and are in good condition. An A.O. Smith storage tank, pumps, and expansion tanks support the equipment. The domestic water heating equipment has remaining service life beyond the scope of this report.

The facility houses a utility air compressor to serve select areas. The 2004 unit appears to be in good condition and should continue to serve the building over the next ten years.

Two simplex sump pump systems serve the loading dock and a mechanical room in the event of a water mishap. The sump pumps, where they could be viewed, are in adequate condition. Based on their estimated installation date, they should be considered for replacement in the next few years.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, showers, kitchen sinks, and utility sinks. The break area sinks should be considered for replacement in the next few years, but all of the remaining fixtures are in good condition, within their normal lifecycle, and should last another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

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Date of Inspection

September 13, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	10,810	0	0	0	0	0	0	0	0	0	0	0	$10,810
EXTERIOR	0	0	0	47,000	0	0	0	0	0	0	0	0	0	0	$47,000
INTERIOR	0	0	0	430,785	185,893	0	0	0	0	53,056	0	0	187,158	0	$856,892
PLUMBING	0	0	0	0	0	0	0	0	0	10,116	0	0	0	0	$10,116
HVAC	0	0	0	106,443	0	0	0	0	0	260,693	0	0	0	0	$367,136
FIRE/LIFE SAFETY	0	88,429	0	0	0	0	0	330,764	0	0	0	0	0	0	$419,193
ELECTRICAL	0	0	0	0	22,006	0	18,749	0	0	958,910	0	14,337	0	0	$1,014,002
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$88,429	$10,810	$584,228	$207,899	$0	$18,749	$330,764	$0	$1,282,775	$0	$14,337	$187,158	$0	$2,725,150
TOTAL NONRECURRING PROJECT NEEDS			$99,239	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,625,911	

CURRENT REPLACEMENT VALUE	$29,152,000
FACILITY CONDITION NEEDS INDEX	0.09
FACILITY CONDITION INDEX	0.02

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
73,733	$2,725,150	$36.96

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$10,810	$0	$10,810
EXTERIOR	$0	$47,000	$47,000
INTERIOR	$0	$856,892	$856,892
PLUMBING	$0	$10,116	$10,116
HVAC	$0	$367,136	$367,136
FIRE/LIFE SAFETY	$88,429	$330,764	$419,193
ELECTRICAL	$0	$1,014,002	$1,014,002
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$99,239**	**$2,625,911**	**$2,725,150**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
4020FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	88,429
4020AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	5,950
4020AC02	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	4,860
				TOTAL	**$99,239**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4020	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	1,893
4020	DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			B2030	Deferred Renewal	17,805
4020	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	Deferred Renewal	27,302
4020	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	287,725
4020	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	ORIGINAL			C3020	Deferred Renewal	124,733
4020	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	18,328
4020	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	Deferred Renewal	69,509
4020	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	Deferred Renewal	36,934
4020	IF04	FLOORING - VINYL SHEET, STANDARD	ORIGINAL			C3020	2018	185,893
4020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-3		E1-01	D5010	2018	3,633
4020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-1	0000003873	118	D5010	2018	3,633
4020	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-4	0000003874	118	D5010	2018	3,633
4020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	REF-2	0000003922	M1-03	D5010	2018	5,554
4020	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	COOLING TWR	0000003865	M1-01	D5010	2018	5,554
4020	VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	P-1	0000003867	M1-03	D5010	2020	9,375
4020	VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	P-2	0000003868	M1-03	D5010	2020	9,375
4020	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2021	316,907

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4020	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		DATA COM RM	D4030	2021	13,857
4020	IF05	FLOORING - VINYL RESILIENT, TILE OR ROLL	FOOD SERVICE AREAS			C3020	2023	53,056
4020	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2023	6,180
4020	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS	0000003861	M1-03	D2020	2023	1,006
4020	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS	0000003862	M1-03	D2020	2023	1,509
4020	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	ZOELLER		107	D2030	2023	710
4020	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SJE RHOMBUS		132B	D2030	2023	710
4020	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-5	0000003918	E1-3	D3040	2023	2,726
4020	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-6	0000003919	E1-3	D3040	2023	2,726
4020	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-17	0000003901	E1-2	D3040	2023	2,726
4020	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-19	0000003886	131C	D3040	2023	2,726
4020	BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				D3060	2023	249,791
4020	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2023	13,731
4020	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	2023	6,173
4020	LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	D5020	2023	1,316
4020	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2023	6,257

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4020	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2023	18,771
4020	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	2023	827,997
4020	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2023	84,665
4020	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-2	0000003784	ROOF	D5010	2025	6,433
4020	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	AHU-1	0000003878	118	D5010	2025	7,904
4020	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			C3020	2026	187,158
							TOTAL	**$2,625,911**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	4020FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$88,429
2	4020AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$5,950
3	4020AC02	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	3	$4,860
		TOTAL FOR PLANT ADAPTION		**$99,239**
		GRAND TOTAL:		**$99,239**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	4020AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$5,950
3	4020AC02	3	Plant Adaption	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	$4,860
				TOTAL FOR ACCESSIBILITY	**$10,810**
1	4020FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$88,429
				TOTAL FOR FIRE/LIFE SAFETY	**$88,429**
				GRAND TOTAL:	**$99,239**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	4020FS01	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/1/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	80	$304	$24,320	$488	$39,040	$63,360
Base Material/Labor Costs				**$24,320**		**$39,040**	
Indexed Material/Labor Costs				**$24,174**		**$39,352**	**$63,526**
Construction Mark Up at 20.0%							**$12,705**
Original Construction Cost							**$76,232**
Date of Original Estimate: 10/1/2018						**Inflation**	**$0**
Current Year Construction Cost							**$76,232**
Professional Fees at 16.0%							**$12,197**
TOTAL PROJECT COST							**$88,429**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	4020AC01	**Category Code:** AC3F	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/1/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The dual-level drinking fountains near room 115, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$932**		**$3,321**	
			Indexed Material/Labor Costs	**$927**		**$3,348**	**$4,275**
					Construction Mark Up at 20.0%		**$855**
					Original Construction Cost		**$5,130**
Date of Original Estimate: 10/1/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$5,130**
					Professional Fees at 16.0%		**$821**
					TOTAL PROJECT COST		**$5,950**

All costs shown as Present Value

INTERIOR SIGNAGE ACCESSIBILITY UPGRADES

Project Number:	4020AC02	**Category Code:** AC3D	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/1/2018	**Element:**	SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	703.1	Not Applicable	Floor-wide: Floor(s) 1

Description

Current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. This scope includes directional signage.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	40	$67.64	$2,706	$19.89	$796	$3,501
Base Material/Labor Costs				**$2,706**		**$796**	
Indexed Material/Labor Costs				**$2,689**		**$802**	**$3,491**
Construction Mark Up at 20.0%							**$698**
Original Construction Cost							**$4,190**
Date of Original Estimate: 10/1/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,190**
Professional Fees at 16.0%							**$670**
TOTAL PROJECT COST							**$4,860**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW02	WALL, EXTERIOR, STUCCO OR CONCRETE RESTORE				13,250	SF	1.00	$159,381	2003	30		2033
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	METAL PANELS			1,020	SF	1.00	$21,523	2003	25	1	2029
WN03	GLASS, CURTAIN WALL, STANDARD				2,700	SF	1.00	$456,932	2003	60		2063
WN05	GLASS, STOREFRONT				900	SF	1.00	$113,453	2003	40		2043
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			23	LEAF	1.00	$69,512	2003	25		2028
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HARDWARE			15	LEAF	1.00	$30,098	2003	40		2043
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			2	LEAF	1.00	$4,013	2003	40		2043
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				160	SF	1.00	$16,670	2003	30		2033
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			6	EA	1.00	$40,622	2012	20		2032
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			7	EA	1.00	$47,392	2012	20		2032
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				1	EA	1.00	$2,095	2003	30		2033
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	1.00	$1,893	2003	12	2	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			23	EA	1.00	$27,302	2003	12	2	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS			15	EA	1.00	$17,805	2003	12		DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				71,333	SF	1.00	$1,491,392	2003	30		2033

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			KITCHEN	2,400	SF	1.00	$50,178	2014	30		2044
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				360	SF	1.00	$103,022	2003	35		2038
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				100	LEAF	1.00	$221,144	2003	60		2063
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				35	LEAF	1.00	$128,399	2003	60		2063
DR03	DOOR - OVERHEAD, INTERIOR	FOLDING WALL			288	SF	1.00	$30,007	2003	45		2048
DR03	DOOR - OVERHEAD, INTERIOR	COILING GRILLE			240	SF	1.00	$25,006	2003	45		2048
DR03	DOOR - OVERHEAD, INTERIOR	STEEL DOOR			64	SF	1.00	$6,668	2003	45		2048
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				100	EA	1.00	$75,290	2003	35		2038
DR26	DOOR PANIC HARDWARE, INTERIOR				35	EA	1.00	$41,544	2003	30		2033
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				160	LF	1.00	$89,741	2003	30		2033
IW01	WALL FINISH - APPLIED, STANDARD				103,090	SF	1.00	$287,725	2003	12	2	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				5,430	SF	1.00	$219,924	2003	60		2063
IW07	WALL FINISH - WOOD PANEL, PREMIUM			100	160	SF	1.00	$7,179	2006	80		2086
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	ORIGINAL			10,470	SF	1.00	$124,733	2003	12	2	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			15,710	SF	1.00	$187,158	2014	12		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF04	FLOORING - VINYL SHEET, STANDARD	ORIGINAL			16,490	SF	1.00	$185,893	2003	15		2018
IF04	FLOORING - VINYL SHEET, STANDARD	2018 INSTALL			1,830	SF	1.00	$20,630	2018	15		2033
IF05	FLOORING - VINYL RESILIENT, TILE OR ROLL	FOOD SERVICE AREAS			2,400	SF	1.00	$53,056	2003	20		2023
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				2,620	SF	1.00	$92,399	2003	40		2043
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				5,240	SF	1.00	$18,328	2003	10	4	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2014 INSTALL			2,490	SF	1.00	$27,714	2014	45		2059
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			43,770	SF	1.00	$487,168	2003	45		2048
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM				3,480	SF	1.00	$47,006	2003	45		2048
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				2,620	SF	1.00	$7,312	2003	24	1	2028
IC07	CEILING FINISH - SUSPENDED ARCHITECTURAL	PERFORATED WOOD			4,000	SF	1.00	$465,667	2003	60		2063
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				3	EA	1.00	$8,082	2003	25		2028
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				22	EA	1.00	$29,725	2003	35		2038
FX04	PLUMBING FIXTURE - SINK, KITCHEN				8	EA	1.00	$6,180	2003	20		2023
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				8	EA	1.00	$13,315	2003	50		2053
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				4	EA	1.00	$4,551	2003	35		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX10	PLUMBING FIXTURE - URINAL				5	EA	1.00	$5,393	2003	35		2038
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				25	EA	1.00	$42,374	2003	35		2038
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			127	1	EA	1.00	$1,080	2003	35		2038
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000003588	134	1	EA	1.00	$1,080	2003	35		2038
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000003590	133	1	EA	1.00	$1,080	2003	35		2038
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS	0000003861	M1-03	1	EA	1.00	$1,006	2003	20		2023
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS	0000003862	M1-03	1	EA	1.50	$1,509	2003	20		2023
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				73,733	SF	1.00	$844,309	2003	50		2053
TK03	WATER TANK (55-274 GAL)	A.O. SMITH	0000005406	0000005406	200	GAL	1.00	$14,543	2013	30		2043
TK06	EXPANSION TANK, STL PT (<20 GAL)	WATTS		103	5	GAL	1.00	$504	2013	30		2043
TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL	0000003925	M1-03	5	GAL	1.00	$504	2017	30		2047
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	A.O. SMITH	0000003863	M1-03	199	MBH	1.00	$16,468	2003	25		2028
WH04	WATER HEATER - COMMERCIAL, GAS (225-310 MBH INPUT)	A.O. SMITH	0000005407	103	250	MBH	1.00	$17,262	2013	25		2038
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	A.O. SMITH	0000003924	M1-03	119	GAL	1.00	$13,845	2017	30		2047
PD02	DRAIN PIPING SYSTEM - CLASSROOM				73,733	SF	1.00	$1,266,756	2003	60		2063

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	ZOELLER		107	1	EA	1.00	$710	2003	20		2023
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SJE RHOMBUS		132B	1	EA	1.00	$710	2003	20		2023
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UTILITY		KILN RM	5	HP	1.00	$11,412	2004	25		2029
BL27	BOILER - GAS (1500-2400 MBH)	B-1	0000005927	M1-03	2,000	MBH	1.00	$75,084	2017	28		2045
BL27	BOILER - GAS (1500-2400 MBH)	B-2	0000006610	M1-03	2,000	MBH	1.00	$75,084	2017	28		2045
CT04	COOLING TOWER (201-250 TONS)	BAC	0000003781	ROOF	227	TON	1.00	$89,973	2003	29		2032
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-2	0000003771	ROOF	3	TON	1.00	$6,869	2003	25		2028
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000005427	ROOF	1	TON	1.50	$3,435	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-3	0000003777	ROOF	3	TON	1.00	$6,869	2003	25		2028
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DAIKIN	0000005426	ROOF	3	TON	1.00	$6,869	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DAIKIN	0000005425	ROOF	2	TON	1.25	$5,725	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-5	0000003773	ROOF	3	TON	1.00	$6,869	2003	25		2028
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-4	0000003774	ROOF	3	TON	1.00	$6,869	2003	25		2028
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	0000003778	ROOF	3	TON	1.00	$6,869	2003	25		2028
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	DAIKIN	0000006468	IDF1-2	1	TON	1.00	$2,970	2014	30		2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DATACOM	0000003576		3	TON	1.00	$5,611	2003	30		2033
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DAIKIN	0000005324	IDF1-2	3	TON	1.00	$5,611	2014	30		2044
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	DATACOM	0000005325		3	TON	1.00	$5,611	2014	30		2044
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	AC-2	0000003593		3	TON	1.00	$5,611	2003	30		2033
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	AC-3	0000003592	IDF1-2	3	TON	1.00	$5,611	2003	30		2033
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	AC-4	0000003794	151	3	TON	1.00	$5,611	2003	30		2033
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	AC-5	0000003903	114	3	TON	1.00	$5,611	2003	30		2033
AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	AHU-1	0000003877	118	20	HP	1.00	$122,893	2003	35		2038
AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	AHU-2	0000003929	M1-03	30	HP	1.00	$175,314	2003	35		2038
AH22	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (<=85 MBH INPUT)	MAU-202	0000005414	ROOF	75	MBH	1.00	$11,583	2013	25		2038
AH23	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (85-108 MBH INPUT)	MAU-203	0000005412	ROOF	100	MBH	1.00	$12,362	2013	25		2038
AH24	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (108-140 MBH INPUT)	MAU-201	0000005424	ROOF	125	MBH	1.00	$13,183	2013	25		2038
AH25	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (140-208 MBH INPUT)	MAU-204	0000005423	ROOF	175	MBH	1.00	$14,281	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000003769	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000003768	ROOF	1	EA	1.00	$3,773	2003	25		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000003767	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000003766	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-21	0000003764	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-22	0000003765	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-10	0000003780	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-11	0000003789	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-12	0000003787	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-13	0000003787	ROOF	1	EA	1.00	$3,773	2003	25		2028
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-203	0000005417	ROOF	1	EA	1.00	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-202	0000005418	ROOF	1	EA	1.00	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-201	0000005419	ROOF	1	EA	1.00	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-204	0000005416	ROOF	1	EA	1.00	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-207	0000005414	ROOF	1	EA	1.00	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-206	0000005413	ROOF	1	EA	1.00	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-205	0000005415	ROOF	1	EA	1.00	$6,899	2013	25		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	RF-1	0000003772	ROOF	1	EA	1.00	$8,436	2003	25		2028
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	RF-2	0000003770	ROOF	1	EA	1.00	$8,436	2003	25		2028
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	RF-3	0000005425	ROOF	1	EA	1.00	$8,436	2003	25		2028
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	RF-4	0000003775	ROOF	1	EA	1.00	$8,436	2003	25		2028
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	RF-6	0000003786	ROOF	1	EA	1.00	$8,436	2003	25		2028
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF-1		ROOF	1	EA	1.00	$8,436	2013	25		2038
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-5	0000003918	E1-3	1	HP	1.00	$2,726	2003	20		2023
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-6	0000003919	E1-3	1	HP	1.00	$2,726	2003	20		2023
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-17	0000003901	E1-2	1	HP	1.00	$2,726	2003	20		2023
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-19	0000003886	131C	1	HP	1.00	$2,726	2003	20		2023
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	KITCHEN_GRILL	0000005656	103	14	LF	1.00	$14,720	2003	30		2033
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	KITCHEN_BAKERY	0000005641	103B	4	LF	1.00	$4,206	2003	30		2033
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION			103B	6	LF	1.00	$6,309	2003	30		2033
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION			103B	14	LF	1.00	$14,720	2003	30		2033
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION			103B	4	LF	1.00	$4,206	2003	30		2033

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION	KITCHEN_WORLD GRILL	0000005639	103B	4	LF	1.00	$4,206	2003	30		2033
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				73,733	SF	1.00	$2,622,992	2003	45		2048
HX07	HEAT EXCHANGER - PLATE FRAME (200-600 GPM)	HX-1	3859	M1-03	250	GPM	1.00	$30,916	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR		103	1	HP	1.00	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	P-3	0000003554	M1-01	10	HP	1.00	$16,926	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	P-4	0000003555	M1-01	10	HP	1.00	$16,926	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	P-5		M1-03	1	HP	1.00	$1,693	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	P-6	0000003923	M1-03	1	HP	1.00	$1,693	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009377	M1-03	1	HP	0.50	$846	2003	30		2033
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006614	M1-03	1	HP	0.50	$846	2013	30		2043
PH04	PUMP - ELECTRIC (20 - 25 HP)	P-1	0000003856	M1-01	25	HP	1.00	$22,437	2003	35		2038
PH04	PUMP - ELECTRIC (20 - 25 HP)	P-2	0000003857	M1-01	25	HP	1.00	$22,437	2003	35		2038
TK23	EXPANSION TANK, STL PT (50-450 GAL)	ET-1	0000003860	M1-03	50	GAL	1.00	$1,684	2003	30		2033
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	TRANE	0000003776	ROOF	5	TON	1.00	$21,204	2007	25		2032
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	RAC-2	0000003782	ROOF	45	TON	1.00	$298,939	2003	25		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				73,733	SF	1.00	$249,791	2003	20		2023
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				73,733	SF	1.00	$69,509	2003	10	4	DR
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				73,733	SF	1.00	$36,934	2003	10	4	DR
FS01	FIRE SPRINKLER SYSTEM - WET				73,733	SF	1.00	$997,507	2003	80		2083
FA01	FIRE ALARM SYSTEM - DEVICES				73,733	SF	1.00	$316,907	2003	18		2021
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		DATA COM RM	1	EA	1.00	$13,857	2003	18		2021
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				73,733	SF	1.00	$1,831,018	2003	50		2053
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	MHB1A	0000003907	E1-03	2,500	AMP	1.00	$210,514	2003	40		2043
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	MAU-204		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-3		E1-01	5	HP	1.00	$3,633	2003	15		2018
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-1	0000003873	118	5	HP	1.00	$3,633	2003	15		2018
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-4	0000003874	118	5	HP	1.00	$3,633	2003	15		2018
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	REF-2	0000003922	M1-03	10	HP	1.00	$5,554	2003	15		2018
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	COOLING TWR	0000003865	M1-01	10	HP	1.00	$5,554	2003	15		2018

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-2	0000003784	ROOF	15	HP	1.00	$6,433	2009	16		2025
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	AHU-1	0000003878	118	20	HP	1.00	$7,904	2009	16		2025
VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	P-1	0000003867	M1-03	25	HP	1.00	$9,375	2003	17		2020
VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	P-2	0000003868	M1-03	25	HP	1.00	$9,375	2003	17		2020
VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	AHU-2		M1-03	30	HP	1.00	$10,846	2016	17		2033
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			27	EA	1.00	$13,731	2003	20		2023
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			8	EA	1.00	$6,173	2003	20		2023
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			5	EA	1.00	$3,858	2015	20		2035
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	1	EA	1.00	$1,316	2003	20		2023
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	15	EA	1.00	$29,214	2003	40		2043
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	5	EA	1.00	$9,738	2003	40		2043
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	15	EA	1.00	$18,771	2003	20		2023
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	5	EA	1.00	$6,257	2003	20		2023
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				73,733	SF	1.00	$827,997	2003	20		2023
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				36,866	SF	1.00	$84,665	2003	20		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN03	GENERATOR - DIESEL (100-200 KW)		0000002322	SITE	200	KW	1.00	$123,303	2015	25		2040
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	GE	0000003906	E1-3	100	AMP	1.00	$5,527	2003	25		2028
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ASCO	0000004666	E1-3	260	AMP	1.00	$10,323	2015	25		2040
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE			101E	80	SF	1.00	$27,656	2003	35		2038
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE			101F	80	SF	1.00	$27,656	2003	35		2038
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE			101G	80	SF	1.00	$27,656	2003	35		2038
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER			SITE	1	EA	1.00	$9,776	2013	15		2028
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER		0000005421	SITE	1	EA	1.00	$9,776	2013	15		2028
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER		0000005422	SITE	1	EA	1.00	$9,776	2013	15		2028
CK01	COMMERCIAL KITCHEN EQUIPMENT ESTIMATE BY SQUARE FOOT	FOOD SERVICE			2,400	SF	0.25	$530,786	2014	20		2034
							Grand Total:	$17,338,314				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$1,893	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	23	EA	$27,302	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	METAL DRS	15	EA	$17,805	DR
C3010	WALL FINISH - APPLIED, STANDARD		103,090	SF	$287,725	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	ORIGINAL	10,470	SF	$124,733	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		5,240	SF	$18,328	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		73,733	SF	$36,934	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		73,733	SF	$69,509	DR
				TOTAL DEFERRED RENEWAL COST	$584,228	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-3	5	HP	$3,633	2018
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-1	5	HP	$3,633	2018
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	REF-4	5	HP	$3,633	2018
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	REF-2	10	HP	$5,554	2018
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	COOLING TWR	10	HP	$5,554	2018

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - VINYL SHEET, STANDARD	ORIGINAL	16,490	SF	$185,893	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$207,899**	

No Projected Component Replacement Cost for Asset No. 4020 for 2019

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (20-25 HP)	P-1	25	HP	$9,945	2020
D5010	VARIABLE FREQUENCY DRIVE (20-25 HP)	P-2	25	HP	$9,945	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$19,891**	

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES		73,733	SF	$346,293	2021
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$15,142	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$361,435**	

No Projected Component Replacement Cost for Asset No. 4020 for 2022

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		8	EA	$7,165	2023
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$1,166	2023
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$1,750	2023
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	ZOELLER	1	EA	$823	2023
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SJE RHOMBUS	1	EA	$823	2023
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-5	1	HP	$3,160	2023
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-6	1	HP	$3,160	2023
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-17	1	HP	$3,160	2023
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-19	1	HP	$3,160	2023
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM		73,733	SF	$289,576	2023
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	27	EA	$15,918	2023
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	8	EA	$7,156	2023
D5020	COM EXTERIOR BOLLARD LIGHTING		1	EA	$1,526	2023
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		15	EA	$21,761	2023
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		5	EA	$7,254	2023
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		73,733	SF	$959,875	2023
C3020	FLOORING - VINYL RESILIENT, TILE OR ROLL	FOOD SERVICE AREAS	2,400	SF	$61,507	2023
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		36,866	SF	$98,150	2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

	2023	PROJECTED COMPONENT REPLACEMENT COST	$1,487,088	

No Projected Component Replacement Cost for Asset No. 4020 for 2024

2025

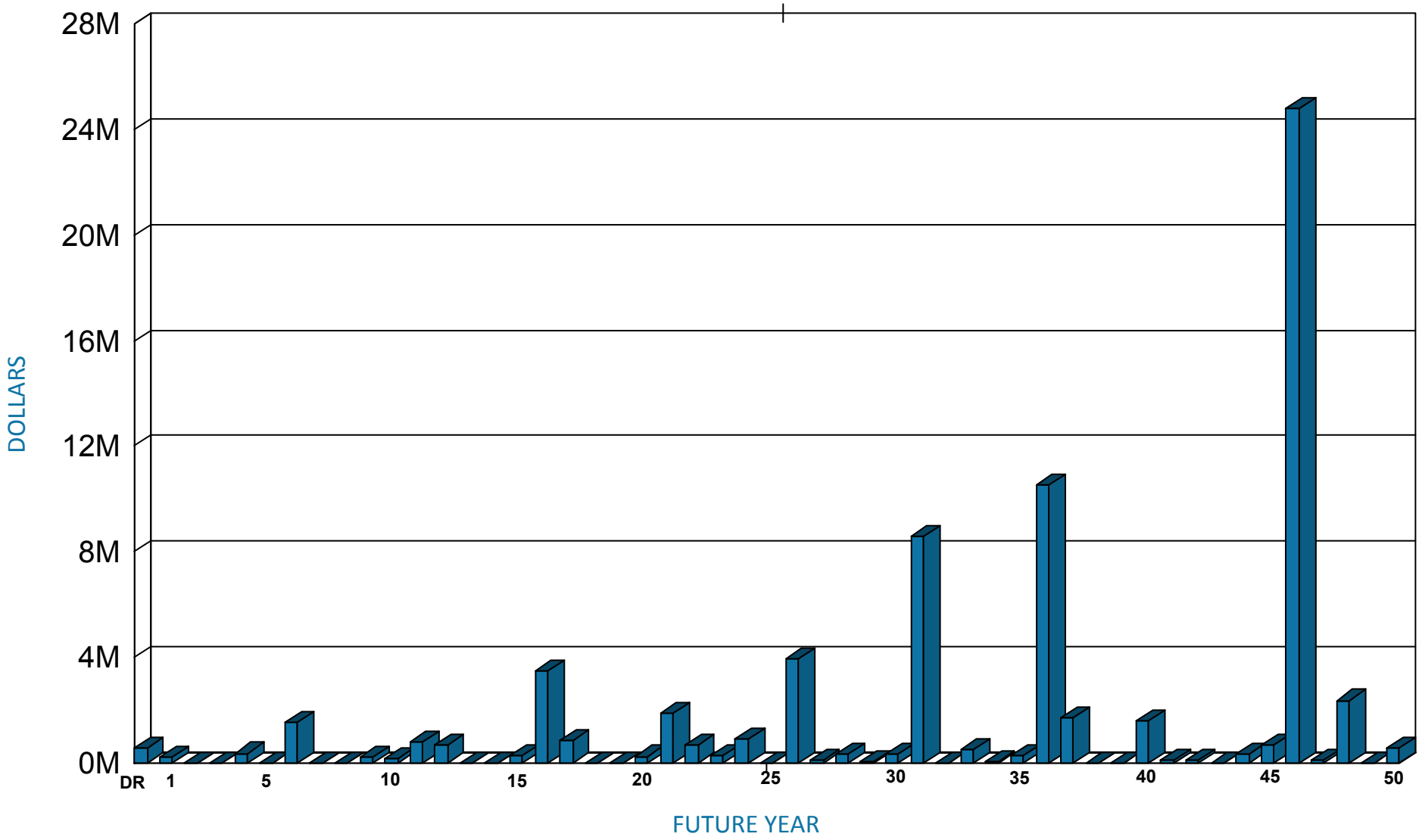
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	RAC-2	15	HP	$7,912	2025
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	AHU-1	20	HP	$9,721	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$17,633	

2026

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL	15,710	SF	$237,087	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$237,087	

No Projected Component Replacement Cost for Asset No. 4020 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.17

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

ROOF
FS01

AC02

MOUNT
TABOR
HALL

BLDG NO. 4020

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/21/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 1

SECTION 6

PHOTOGRAPHS

4020001a 9/13/2018
Roof membrane and roof-mounted equipment
Roof

4020001e 9/13/2018
Exhaust fan
Roof

4020002a 9/13/2018
Fall protection anchor and deteriorated roof membrane
Roof

4020002e 9/13/2018
Exhaust fan
Roof

4020003a 9/13/2018
Solar light tube
Roof

4020003e 9/13/2018
Exhaust fan
Roof

4020004a 9/13/2018

Roof drain and overflow drain low parapet without fall protection

Roof

4020004e 9/13/2018

Return fan

Roof

4020005a 9/13/2018

Courtyard and roof without fall protection

Roof

4020005e 9/13/2018

Condensing unit

Roof

4020006a 9/13/2018

Service court shed roof

Roof

4020006e 9/13/2018

Condensing unit

Roof

4020007a 9/13/2018
Mechanical screen walls
Roof

4020007e 9/13/2018
Return fan
Roof

4020008a 9/13/2018
Skylights and roof membrane
Roof

4020008e 9/13/2018
Condensing unit
Roof

4020009a 9/13/2018
Intermediate roof access and roof drains
Roof

4020009e 9/13/2018
Cooling tower
Roof

4020010a 9/13/2018

Mechanical screen wall, roof-mounted equipment, and roof access hatch

Roof

4020010e 9/13/2018

Outdoor air handling unit

Roof

4020011a 9/13/2018

Roof drain and overflow drain

Roof

4020011e 9/13/2018

HVAC control panel

Roof

4020012a 9/13/2018

Wall-mounted lavatories and area finishes

Room T1-03

4020012e 9/13/2018

VFD

Roof

4020013a 9/13/2018

Urinals, screen, and area finishes

Room T1-03

4020013e 9/13/2018

Exhaust fan

Roof

4020014a 9/13/2018

Standard stall, water closet, and accessories

Room T1-03

4020014e 9/13/2018

Makeup air unit

Roof

4020015a 9/13/2018

Accessible drinking fountains

Corridor 101

4020015e 9/13/2018

Makeup air unit

Roof

4020016a 9/13/2018
Skylights and ceiling finish
Room 103

4020016e 9/13/2018
Exhaust fans
Roof

4020017a 9/13/2018
Interior finishes
Room 103

4020017e 9/13/2018
Refrigeration equipment
Roof

4020018a 9/13/2018
Curtain wall, exit door, hardware, and signage
Room 103

4020018e 9/13/2018
Refrigeration equipment
Roof

4020019a 9/13/2018
Typical corridor finishes
Corridor C1-6

4020019e 9/13/2018
Makeup air unit
Roof

4020020a 9/13/2018
Accessible drinking fountains without required side protection
Corridor C1-1

4020020e 9/13/2018
Emergency eyewash
Room 103B

4020021a 9/13/2018
Door without required accessible signage
Corridor C1-4A

4020021e 9/13/2018
Water heaters
Room 103A

4020022a 9/13/2018
Courtyard wall and area finishes
Corridor C1-4A

4020022e 9/13/2018
Kitchen hood
Room 103B

4020023a 9/13/2018
Restroom doors with powered door openers
Corridor C1-3

4020023e 9/13/2018
Kitchen hood
Room 103B

4020024a 9/13/2018
Lavatories and area finishes
Room T1-04

4020024e 9/13/2018
Kitchen hood
Room 103B

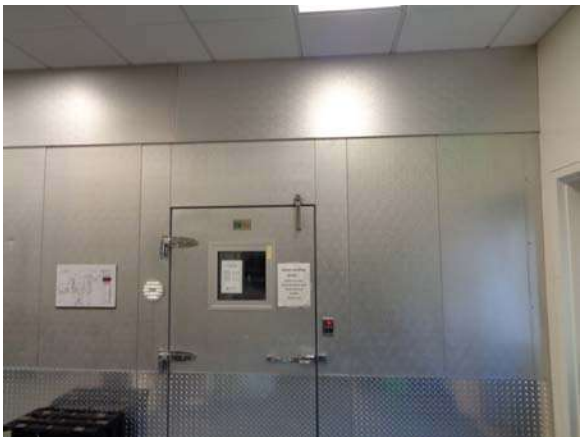
4020025a 9/13/2018
Accessible water closet and accessories
Room T1-04

4020025e 9/13/2018
Kitchen hood
Room 103B

4020026a 9/13/2018
Commercial kitchen equipment and area finishes
Room 103B

4020026e 9/13/2018
Kitchen hood
Room 103B

4020027a 9/13/2018
Commercial kitchen equipment and area finishes
Room 103B



4020027e 9/13/2018
Walk-in cooler
Room 103B

4020028a 9/13/2018
Commercial kitchen equipment and area finishes
Room 103B

4020028e 9/13/2018
Walk-in cooler
Room 103B

4020029a 9/13/2018
Servery area finishes
Room 103

4020029e 9/13/2018
Walk-in cooler
Room 103B

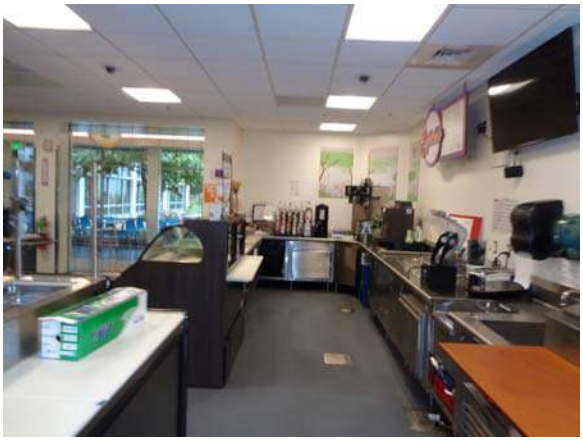
4020030a 9/13/2018
Overhead coiling grilles at the servery area
Room 103

4020030e 9/13/2018
Walk-in cooler
Room 103B

4020031a 9/13/2018

Utility sink

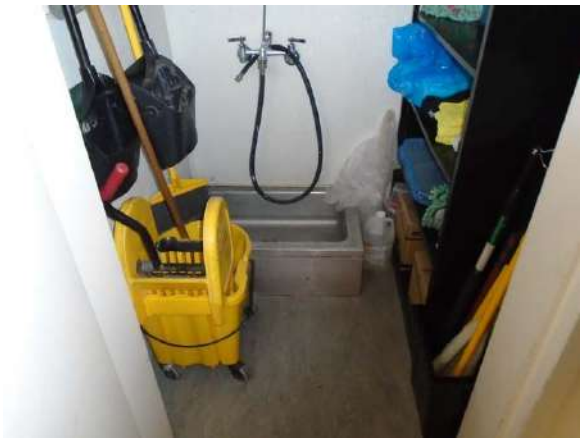
Room 103A



4020031e 9/13/2018

Interior lighting

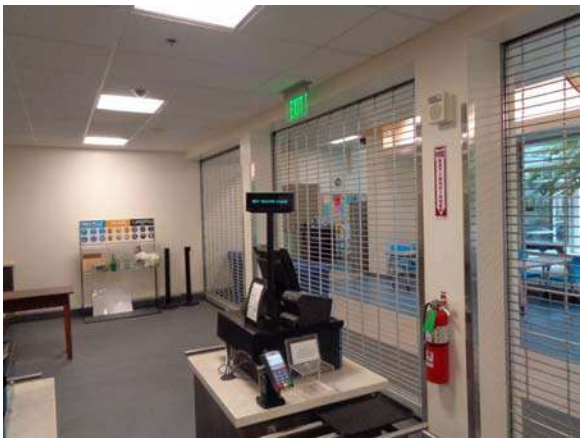
Room 103



4020032a 9/13/2018

Utility sink

Room J1-01



4020032e 9/13/2018

Strobe and fire extinguisher

Room 103

4020033a 9/13/2018

Detail at typical window glazing

Room 152

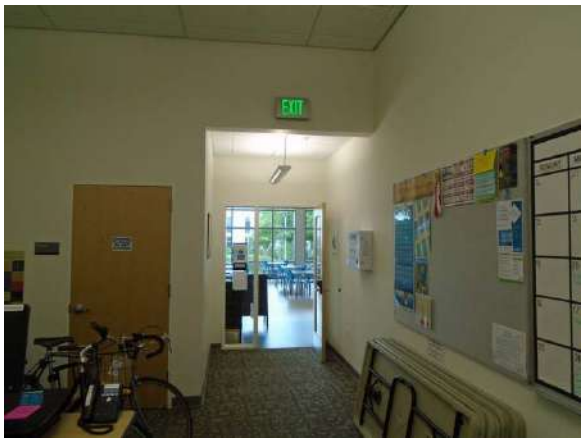
4020033e 9/13/2018

VFD

Room M1-1

4020034a 9/13/2018
Typical office area finishes
Room 152

4020034e 9/13/2018
HVAC control panel
Room M1-1



4020035a 9/13/2018
Exit signage and room finishes
Room 152

4020035e 9/13/2018
Pump equipment
Room M1-1

4020036a 9/13/2018
Conference room wood wall finishes
Room 100

4020036e 9/13/2018
Pump equipment
Room M1-1

4020037a 9/13/2018
Conference room wood ceiling finish
Room 100

4020037e 9/13/2018
Heat exchanger
Room M1-1

4020038a 9/13/2018
Fitness room exit doors, hardware, and signage
Room 101

4020038e 9/13/2018
Backflow preventer
Room M1-1

4020039a 9/13/2018
Accessible shower
Room T1-02

4020039e 9/13/2018
Pump equipment
Room M1-1

4020040a 9/13/2018
Lavatory and accessories
Room T1-02

4020040e 9/13/2018
Water heater
Room M1-1

4020041a 9/13/2018
Accessible stall, water closet, and accessories
Room T1-02

4020041e 9/13/2018
VFD
Room M1-1

4020042a 9/13/2018
Dance room floor and wall finishes, exit door, hardware, and signage
Room 102

4020042e 9/13/2018
Boiler
Room M1-1

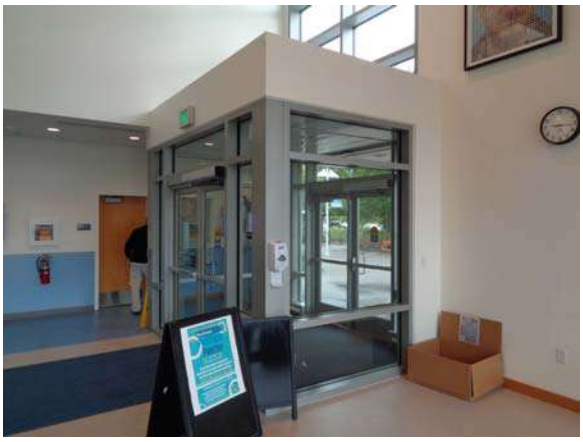
4020043a 9/13/2018
Unfirestopped wall penetrations
Room E1-1

4020043e 9/13/2018
Unit heater
Room M1-1

4020044a 9/13/2018
Break room casework and sink
Room 108

4020044e 9/13/2018
Interior lighting
Corridor C1-2

4020045a 9/13/2018
Classroom finishes
Room 111



4020045e 9/13/2018
Exit signage
Corridor C1-2

4020046a 9/13/2018
Workroom casework
Room 115

4020046e 9/13/2018
Interior lighting
Room 152

4020047a 9/13/2018
Door with accessible signage and hardware
Room 145

4020047e 9/13/2018
Strobe and interior lighting
Room 151

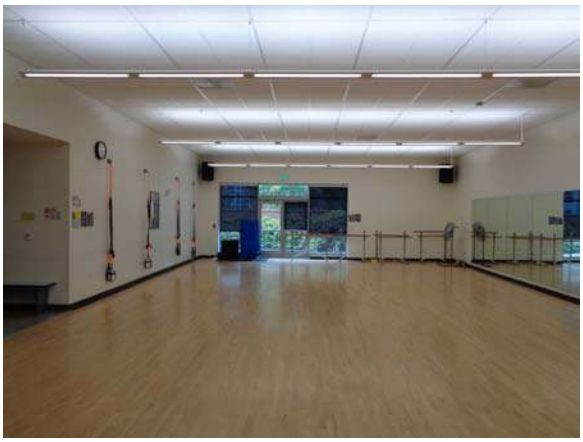
4020048a 9/13/2018
Fire-rated labeled door
Room 145

4020048e 9/13/2018
Occupancy sensor
Room 100

4020049a 9/13/2018
Photography lab casework
Room 131

4020049e 9/13/2018
Interior lighting
Room 101

4020050a 9/13/2018
Pottery studio casework and sink
Room 134



4020050e 9/13/2018
Interior lighting
Room 102

4020051a 9/13/2018
Exterior window and room finishes
Room 134

4020051e 9/13/2018
Panelboard
Room E1-1

4020052a 9/13/2018

Utility sink

Room 134

4020052e 9/13/2018

VFD

Room E1-1

4020053a 9/13/2018

Overhead coiling steel door

Room 132

4020053e 9/13/2018

Panelboards

Room E1-1

4020054a 9/13/2018

Entrance walkway and exterior finishes

North elevation

4020054e 9/13/2018

Fire alarm panels

Data com room

4020055a 9/13/2018
Exterior finishes and site conditions
North elevation

4020055e 9/13/2018
Interior lighting
Room 107

4020056a 9/13/2018
Loading dock and overhead door
North elevation

4020056e 9/13/2018
Switchboard
Room E1-3

4020057a 9/13/2018
Loading dock overhead coiling steel door
Room 132B

4020057e 9/13/2018
Automatic transfer switch
Room E1-3

4020058a 9/13/2018
Corridor entrance door and exterior finishes
West elevation

4020058e 9/13/2018
Exhaust fan
Room E1-3

4020059a 9/13/2018
Loading dock
West elevation

4020059e 9/13/2018
Exhaust fan
Room M1-3

4020060a 9/13/2018
Accessible parking
West elevation

4020060e 9/13/2018
AHU and VFD
Room M1-3

4020061a 9/13/2018
Exterior finishes at the food service addition
West elevation

4020061e 9/13/2018
VFDs
Room M1-3

4020062a 9/13/2018
Detached shed and food service area
West elevation

4020062e 9/13/2018
Pump equipment
Room M1-3

4020063a 9/13/2018
Detached shed and service court paving
West elevation

4020063e 9/13/2018
HVAC piping
Room M1-3

4020064a 9/13/2018
Exterior finishes and site conditions
South elevation

4020064e 9/13/2018
Interior lighting
Room 145

4020065a 9/13/2018
Exterior finishes and site conditions
South elevation

4020065e 9/13/2018
Interior lighting
Room 131

4020066a 9/13/2018
Exterior finishes and site conditions
South elevation

4020066e 9/13/2018
Interior lighting
Room 134

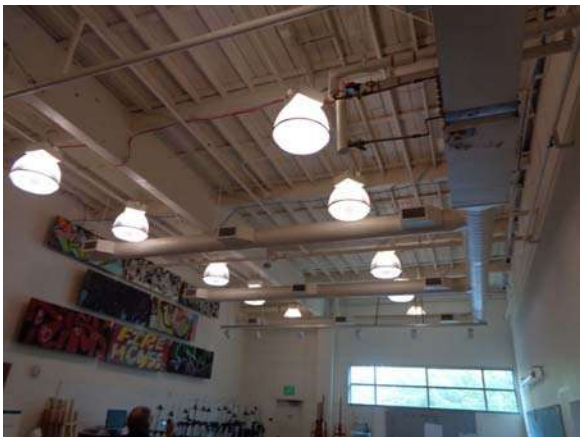
4020067a 9/13/2018
Exterior finishes and site conditions
East elevation

4020067e 9/13/2018
Eyewash station
Room 134

4020068a 9/13/2018
Exterior finishes and site conditions
East elevation

4020068e 9/13/2018
Plastic drain piping
Room 134

4020069a 9/13/2018
Exterior finishes and site conditions
East elevation



4020069e 9/13/2018
Interior lighting
Room 133

4020070a 9/13/2018
Entrance at the covered walk connection to Mount Scott Hall
East elevation

4020070e 9/13/2018
Reheat coil
Room 133

4020071a 9/13/2018
Exterior finishes and site conditions
East elevation

4020071e 9/13/2018
Air compressor
Kiln room

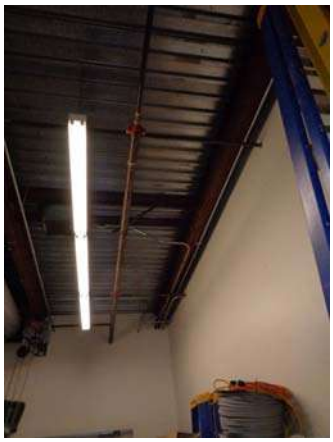
4020072a 9/13/2018
Exterior finishes and site conditions
East elevation

4020072e 9/13/2018
Exterior lighting
Site

4020073a 9/13/2018
Exterior finishes and courtyard site conditions
East elevation

4020073e 9/13/2018
Exterior lighting
Loading dock

4020074a 9/13/2018
Courtyard walkway, wall, and exit door
East elevation



4020074e 9/13/2018
Interior lighting
Loading dock

4020075e 9/13/2018
Exterior lighting
West elevation

4020076e 9/13/2018
Interior lighting
Room 127

4020077e 9/13/2018
Drain and supply piping
Room 127

4020078e 9/13/2018
Exterior lighting
Courtyard

4020079e 9/13/2018
Exterior lighting
Building exterior

4020080e 9/13/2018
Exterior lighting
East elevation

4020081e 9/13/2018
Generator
Site

4020082e 9/13/2018
Transformer
Site

4020083e 9/13/2018
Exterior lighting
West elevation

4020084e 9/13/2018
Exterior lighting
Site

4020085e 9/13/2018
Exterior lighting
East elevation

4020086e 9/13/2018
Exterior lighting
Site

4020087e 9/13/2018
Exterior lighting
Courtyard

4020088e 9/13/2018
Exterior lighting
Courtyard

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	4020
Asset Name	Mount Tabor Hall
Year Built or Last Energy Renovation	2003

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

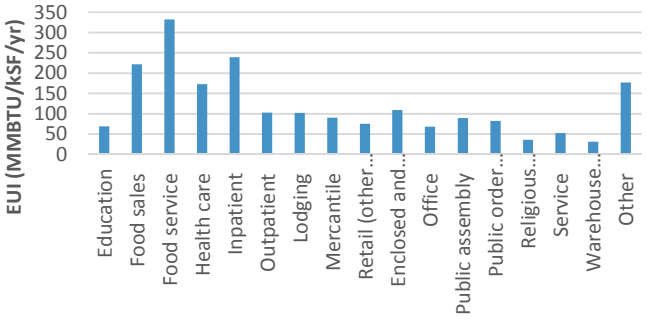
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

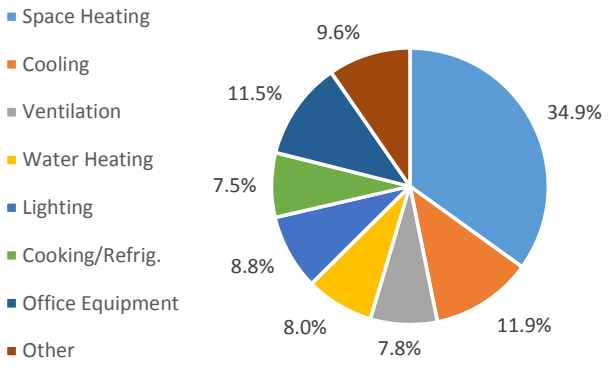


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Cooling Tower Free Cooling	INSTALL A PLATE FRAME HEAT EXCHANGER. A plate frame heat exchanger will allow free cooling during mild summer weather periods so that the chiller does not need to operate.	CAP
HVAC - Cooling Tower Meter	INSTALL A COOLING TOWER METER. A water meter on the cooling tower can be used to determine how much water is evaporated, lost to overflow, or lost to drift. This information can be sent to the water provider to reduce the cost of sewer treatment.	LC/NC
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Southeast Campus

Infrastructure Condition Assessment

Southeast Campus Infrastructure
Asset SE00

Inspected August 21, 2018

ISES CORPORATION

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INFRASTRUCTURE CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

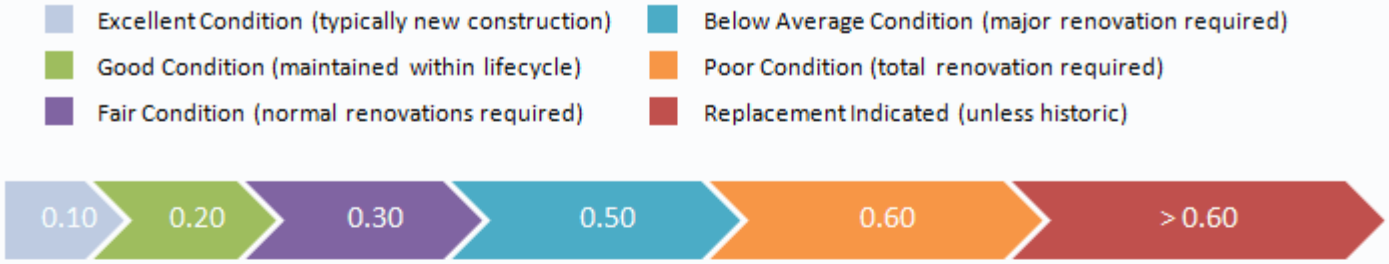
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

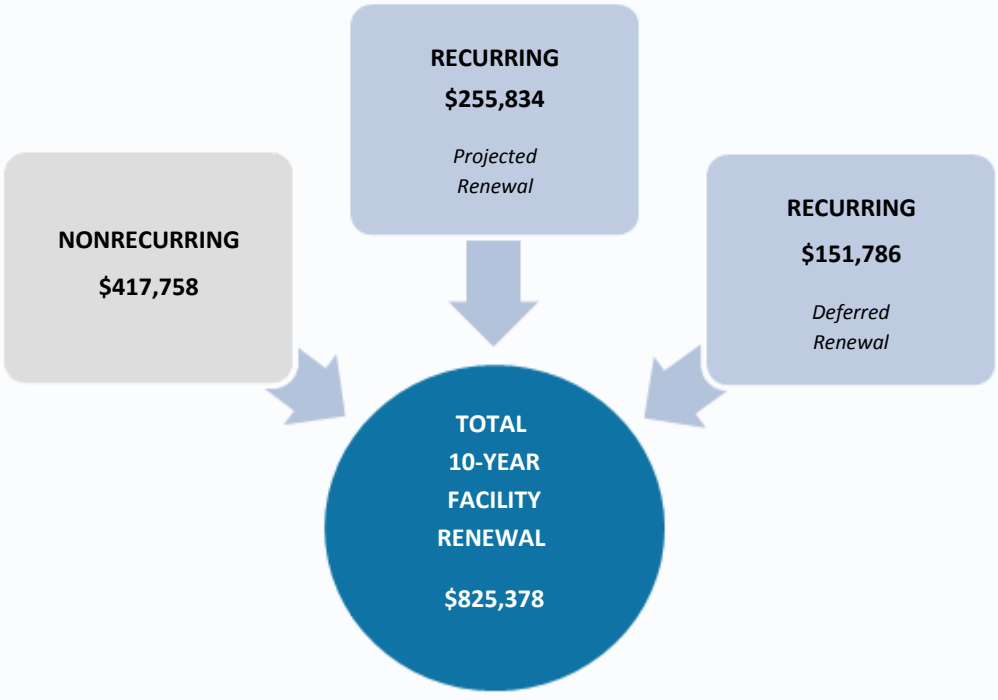
ASSET CODE	SE00		
ASSET NAME	SOUTHEAST CAMPUS INFRASTRUCTURE	**CURRENT REPLACEMENT VALUE**	$7,027,475
ASSET USE	Infrastructure	**FACILITY CONDITION NEEDS INDEX**	0.12
YEAR BUILT	2004	**FACILITY CONDITION INDEX**	0.02
GSF	229,657	**10-YEAR $/SF**	3.59
INSPECTION DATE	08/21/2018		

FCNI Scale

The FCNI for this asset is **0.12**



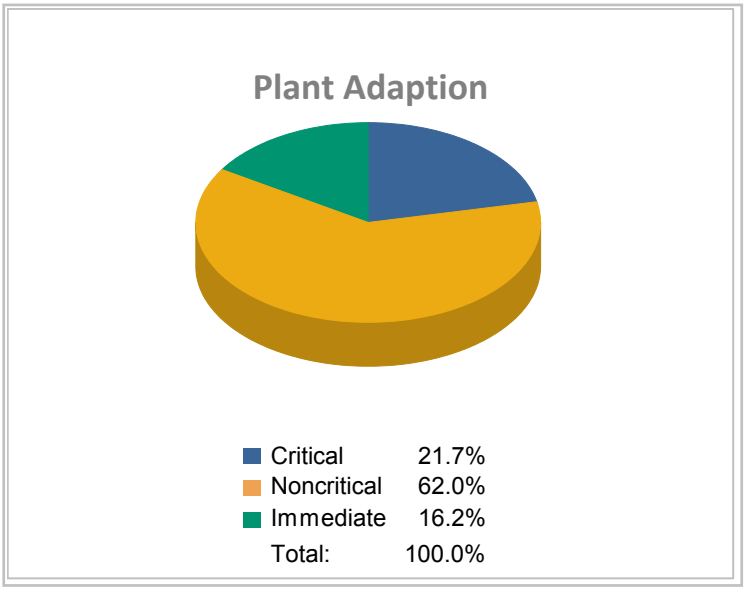
Total Facility Renewal Costs



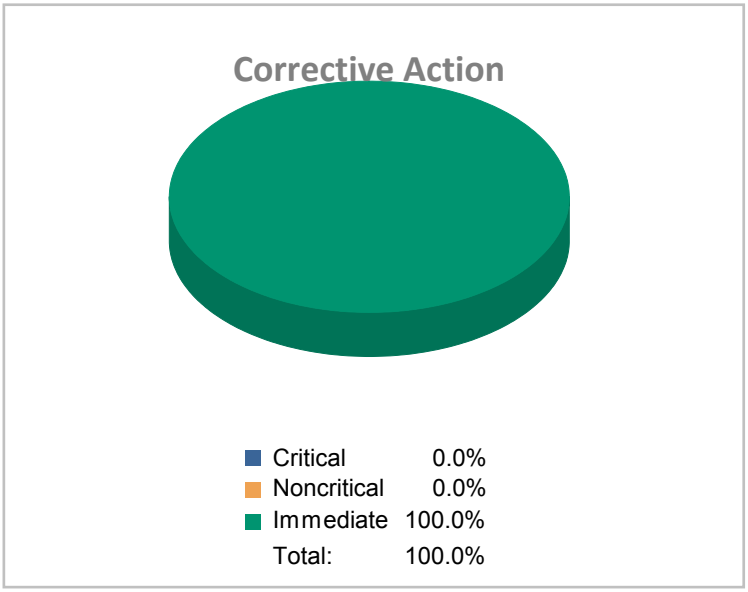
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$60,392**
2 - Critical	**$80,905**
3 - Noncritical	**$230,683**

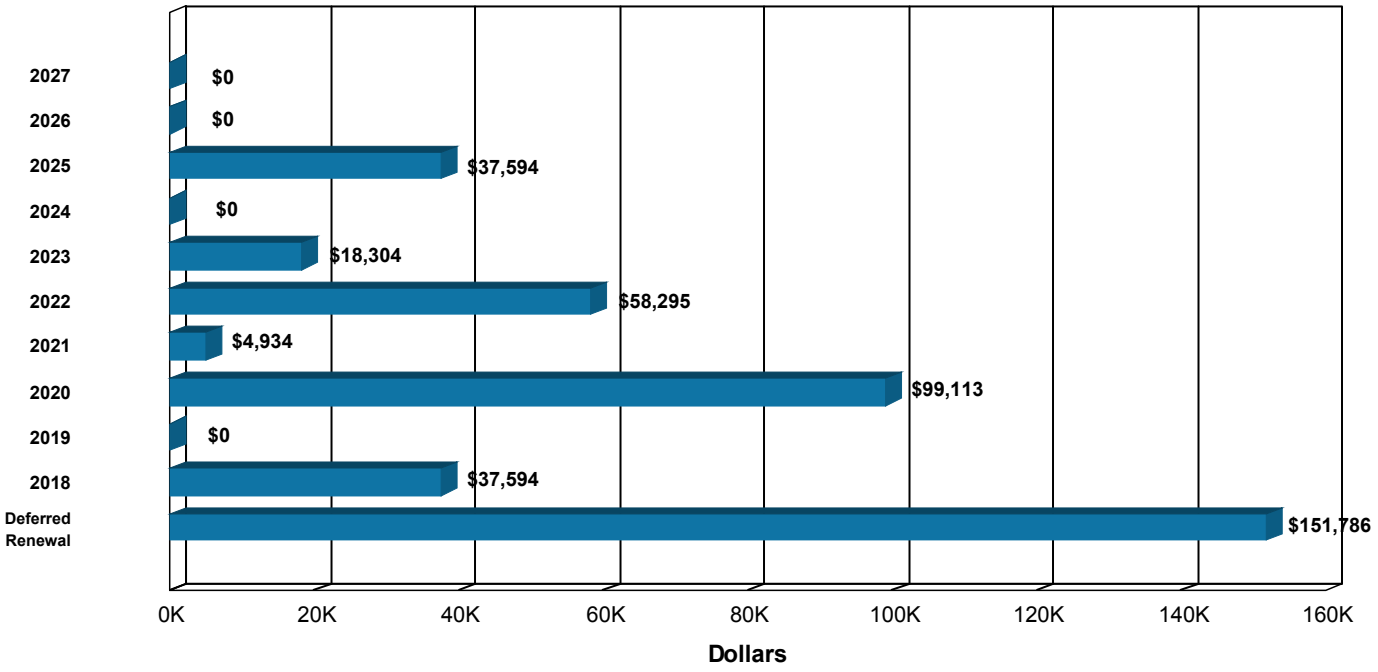


CORRECTIVE ACTION	
1 - Immediate	**$45,778**
2 - Critical	**$0**
3 - Noncritical	**$0**

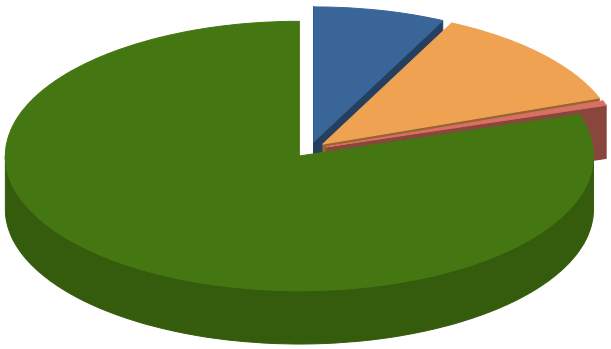


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$60,392	7%
Electrical	$99,113	12%
Exterior	$0	0%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$0	0%
Interiors	$0	0%
Plumbing	$6,158	1%
Site	$659,715	80%
Vert. Trans.	$0	0%
TOTAL	**$825,378**	

ASSET SUMMARY

The Southeast Campus of Portland Community College is located at 2305 Southeast 82nd Avenue in Portland, Oregon. Located in an urban campus setting and originally established at this location in 2004 as the Southeast Center, the campus was constructed on a site formerly occupied by a retail shopping center. The facility became a full campus in 2014 after the purchase and modification of the west campus buildings (formerly the German-American Community Center) and construction of new campus buildings on the original campus. The campus now covers about 17.55 acres west of Southeast 82nd Avenue and north of Southeast Division Street.

Information for this report was gathered during a site visit conducted on August 21, 2018.

Parking Lots

Pavement systems deteriorate with time due to a combination of normal aging and structural fatigue. At a certain point, the rate of deterioration starts to advance rapidly. Once a pavement reaches this stage, major repair or reconstruction is usually required to restore the pavement to good condition. Usually, pavements can be maintained in good condition through simple cost-effective measures. For example, sealing cracks minimizes water intrusion into the pavement structure that can weaken subbase layers leading to structural failure. Application of a surface sealant to asphalt pavements helps seal minor cracks and reduces the environmental affects that age a pavement. Sealing joints in concrete pavements keeps incompressible debris out of the joints that lead to cracking and joint deterioration. Recommendations made in this report are based on the philosophy that the cost to maintain a pavement in good condition is far less than the cost to restore or reconstruct the pavement system. Therefore, priority is given to pavement maintenance projects over pavement restoration (mill and overlay) or reconstruction projects.

The project recommendations in this report are based on commonly used pavement maintenance and repair methods. Before initiating a project, an engineering assessment should be performed, including pavement coring or other analysis to determine the existing pavement structure, and locating and measuring areas that require full-depth patching. Based on that assessment, other pavement maintenance or repair methods may be identified that would be more suitable for the conditions, less disruptive to daily operations, or possibly more cost effective.

The following table summarizes the parking lot pavements reviewed during this assessment. The pavement designations are based on published maps and field observations. Pavement areas and parking space counts were taken from “PCC Parking and Transportation Areas” drawings dated May 19, 2015, revised July 14, 2017. The accuracy of the pavement area should be confirmed with field measurements before finalizing any projects.

Table 1: Parking Lot Summary

PARKING LOT	CONSTRUCTION DATE	LAST RESURFACED	TOTAL AREA (SF)	PARKING SPACES	ADA SPACES
A	2004	2011	68,566	184	8
B	2015	2015	35,872	95	0
C	2004	2015	32,923	67	5
D	2004	2015	51,284	83	8
E	2014	2014	11,244	20	2
F	1990	2016	29,768	52	4
		Totals	229,657	501	27

In addition to these parking areas, PCC leases parking from the church north of the campus as overflow parking. However, this parking lot is not available during the evenings or weekends. The overflow parking lot was not included in this assessment.

Parking Lot A: This parking lot is located east of Mt. Tabor Hall and north of Mt. Scott Hall. It includes the main entrance drive from SE 82nd Avenue. This parking lot has an asphalt pavement. The overall pavement condition is good, with some longitudinal and block cracking. This pavement should not need major repairs or reconstruction during the evaluation period. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Parking Lot B: This parking lot is located at the northeast corner of the campus. This parking lot was constructed in 2015 after demolition of a small building. It has an asphalt pavement that is in good condition. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Parking Lot C: This parking lot is located north of Mt. Tabor Hall. It has an asphalt pavement that is in good condition and was resurfaced in 2015. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Parking Lot D: This parking lot is located west of Mt. Tabor Hall. The south end of the parking includes a drive that connects to SE Division Street. This drive includes a PCC shuttle bus stop. The drive was reconstructed in 2014 after demolition of an old restaurant and construction of the new library. The original parking lot pavement was resurfaced in 2015. The pavement is in good condition, but has some longitudinal and block cracking throughout. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings. Prior to resurfacing, clean and seal the cracks using a polymer-modified asphalt.

Parking Lot E: This parking lot is located south of the Administration Hall. It has an entrance from SE Division Street and exits at the Parking Lot D drive. It was reconstructed in 2014 after the annex wings of Administration Hall were demolished. The asphalt pavement is in good condition. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Parking Lot F: This parking lot is located at the west end of the campus, west of the Community Hall Annex, with access from SE Division Street and from SE 78th Avenue. The parking lot existed prior to this property being purchased by PCC and was resurfaced in 2016. It is in good condition, with some longitudinal cracking. To maintain this pavement, seal the surface in five to ten years and repaint the pavement markings. Prior to resurfacing, clean and seal the cracks using a polymer-modified asphalt.

Sidewalks

Pedestrian travel is supported by concrete sidewalks and plazas throughout the campus. Most of the hardscape is in good condition, consistent with the age of the campus, and constructed to modern standards. In general, the concrete flatwork should not need major repairs or replacement during the evaluation period.

One older sidewalk remains in the west campus area, running from Parking Lot F to the north, then east along the fence parallel to SE Sherman Street. This is a narrow concrete sidewalk with some faulting at joints and some accessibility restrictions. If this sidewalk continues to be used as a circulation pathway, it should be reconstructed to meet current standards.

Site Lighting

Parking lot lighting is mainly provided by pole-mounted LED lights with either single or double lamps per pole. These lights were installed in either 2004 (original campus) or 2014 to 2015 (campus expansion). The LED lights are in good condition and should not need to be replaced during the evaluation period. Parking Lot F has some older sodium-vapor light fixtures that predate the PCC campus. These lights appear to be in good condition, but are expected to reach the end of their normal service life during the evaluation period and should be replaced.

Sidewalks in the original campus area are illuminated by pole-mounted sodium-vapor lights with either single or double lamps per pole. These lights were installed in 2004 for the original campus. The sodium-vapor lights are expected to reach the end of their normal service life during the evaluation period and should be replaced. The campus expansion areas of the south and west campus areas have newer pole-mounted LED lights with single lamps per pole. These LED lights are in good condition and should not need to be replaced at this time. In addition, bollard lights have been installed along the sidewalks from Parking Lot F through the west campus area and at the entrances to the newer facilities in the south campus expansion area. The bollard lights are in good condition and should outlast the scope of this report.

When replacing the older sodium-vapor lights, replacement fixtures should be LED lights in keeping with PCC energy conservation policies. Therefore, the cost for replacing these lights has been increased to account for the differences in material prices. All of the light poles are in good condition and should not need to be replaced during the evaluation period.

Site Accessibility

The scope of work addresses accessibility issues related to parking, path of travel from nearby public transportation stops to the campus, path of travel from accessible parking to campus circulation areas, and the overall paths of travel through the campus. Because the campus is nearly level and relatively new, overall site accessibility is good. However, accessibility improvements are needed to comply fully with current ADA Guidelines. Some of these needed improvements were documented in the "Portland Community College Americans with Disabilities Act Barrier Removal Plan" prepared by ISES Corporation in June 2012, and in the "Portland Community College Site Accessibility Assessment" prepared by David Evans and Associates, Inc. in April 2018. Others were noted during the ISES site visit in August 2018.

Path of Travel from Public Transportation Stops: A bus shelter for the TriMet bus system is located on SE 82nd Avenue, east of Parking Lot A. A sidewalk runs from the public sidewalk near this bus stop through Parking Lot A to the campus sidewalk near the northeast corner of Mt. Tabor Hall. The path of travel is a level, concrete sidewalk. Where the sidewalk crosses travel lanes of the parking lot, there are no tactile warnings and no pavement markings indicating the path of travel. Install tactile warnings and pavement markings at the parking lot travel lanes. Additional access points are provided from public sidewalks along SE 82nd Avenue and SE Division Street. PCC also provides a shuttle bus between campuses, with a shuttle stop and shelter constructed at the south end of Parking Lot D. The drive lane was widened at this point to allow free flow of traffic in and out of the campus. The pathways across this drive lane have tactile strips with adequate contrast at both sides. However, the approach ramps to these crosswalks have side slopes that exceed 2 percent. These ramps need to be reconstructed.

Path of Travel from Parking Areas: Walkways are provided from Parking Lot B and the overflow parking north of Parking Lot C. In Parking Lot B, a concrete sidewalk provides pedestrian access through the parking lot to the main entrance drive at Parking Lot A. Where the sidewalk crosses landscape islands, tactile strips are provided. However, the tactile strips are light gray in color, providing only slight contrast with the concrete sidewalk. These tactile strips will need to be replaced as they age. This sidewalk ends at the Parking Lot A drive lane. A marked crosswalk should be provided from the end of the sidewalk, across the drive lanes to the sidewalk at the northeast corner of Mt. Tabor Hall. Another pathway is provided from the overflow parking lot north of the campus through Parking Lot C. This pathway is marked and compliant tactile strips are provided where the pathway crosses the drive lanes. Additional sidewalks cross Parking Lot D, connecting to the residential area to the west. The sidewalk at the north end of Parking Lot D is not marked where it crosses the drive lanes and no tactile warnings are provided. Install tactile warnings and paint the crosswalks. Parking Lot E, south of Administration Hall, has an entry sidewalk from SE Division Street. The entry sidewalk has a slope that exceeds 5 percent, but lacks handrails. The sidewalk on the east side of Administration Hall is sloped, but does not have handrails. Install handrails on the sides of this sidewalk. The walkway across the parking lot drive lane is unmarked. Paint the crosswalk. A new sidewalk connects Parking Lot F to the campus. A curb cut at Parking Lot F has a cross-slope at the landing that exceeds slope requirements. Reconstruct this curb cut.

Accessible Parking: Accessible parking is provided in areas close to the main building entrances or to the main campus circulation paths. The number of accessible parking spaces is more than required. However, some of the accessible parking spaces do not have side aisles, as required. Others do not have van accessible parking or have spaces marked as van accessible, but without the 8-foot wide side aisle.

These parking areas need to be reconfigured to comply with current requirements. Some accessible parking spaces have slopes of more than 2 percent and need to be reconstructed to comply with the slope requirements or need to be relocated. A few accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced.

Paths of Travel Through Campus: Because the campus is nearly level, the paths of travel through the campus are generally free of obstructions and meet ADA requirements. However, the old sidewalk in the west campus area was not constructed to current standards and does not meet ADA Guidelines. This sidewalk needs to be either removed or reconstructed.

Underground Utilities

Underground utilities at this site include stormwater, sanitary sewer, water, and fire protection utilities which are discussed in the following sections. During the initial campus construction, most of the retail structures were demolished. One warehouse structure was completely reconstructed to meet the needs of PCC. The utility services would have been inadequate for the new purpose and are assumed to have been replaced. The addition of new buildings on the south end of the campus would have required new utility services for those buildings. With the purchase of the west campus facilities, two existing buildings were put into service. Previously owned by the German-American Society, the buildings included the 1911 Building (now Administration Hall) with two added wings and an annex building (Community Hall Annex). The added wings were demolished and both buildings completely renovated. Utility services to these buildings is believed to be in good condition.

PCC personnel have expressed a desire to have a more comprehensive method to manage the underground utility assets. Available information about underground utilities is lacking, making asset management difficult. A detailed subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. The survey should include a review of existing documents and recording that information on a comprehensive CAD drawing. The field work should include field locating visible utility items, such as manholes and vaults, measuring invert elevations and pipe sizes, and recording pipe and manhole materials. The information obtained from the field survey will be used to field verify the information obtained from the existing document and drawing review and to correct that information, when in error.

Prior to the campus expansion in 2014, a utility survey was completed. However, that did not include the west campus area or the Parking Lot B area to the north. Because of the extent of renovations to the original campus, the original utility survey should be field verified.

Each component of the underground systems has a quantifiable industry standard expected lifecycle. Information related to system performance was reviewed to determine trends that might affect that lifecycle and the future safety, reliability, and efficiency of the system. The table below shows the expected useful, reliable life of typical underground utility system components.

Table 2: Average Expected Useful Life

COMPONENT	TYPE	USEFUL LIFE (YEARS)
Storm drain pipe	Concrete	100
Storm drain pipe	Terra cotta clay	75
Storm drain pipe	Ductile iron	50
Storm drain pipe	Corrugated metal	45
Manhole	Concrete	100
Manhole	Brick masonry	75
Catch basin/drop Inlet	Concrete	100
Catch basin/drop Inlet	Brick masonry	75
Combo drain	Concrete	100
Combo drain	Brick masonry	75
Sanitary sewer pipe	Concrete	100
Sanitary sewer pipe	Vitrified clay	75
Sanitary sewer pipe	Ductile iron	50
Sanitary sewer pipe	PVC or plastic	50
Manhole	Concrete	100
Manhole	Brick masonry	75
Potable water supply line	PVC or plastic	50
Potable water supply line	Ductile iron	75
Potable water supply line	Cast-iron	75
Fire hydrant	Cast-iron	65
Fire pump	125 hp, 1,000 GPM	25
Domestic water pump	15 hp, electric	20

Source Data: ASHRAE, BOMA, Hartford Ins. Co., ISES Database

The realization of the full expected useful life preserves the original capital investment strategy while accelerated depreciation results in premature expenditure of resources. It should be emphasized that expected useful life values are averaged forecasts based on components that are properly maintained and operated without frequent and/or severe operating conditions. Chronological age is not the primary determinant of service life. In many instances, there is ample evidence of components operating well beyond predicted useful life values. This is why it is important to modify these values based on actual conditions, service history, operating conditions, installation environment, and actual field performance.

In addition, system components reaching the predicted endpoint of expected useful life do not necessarily cease to function. What does occur is a downward trend toward loss of service reliability, a potential increase in maintenance costs, damage caused by natural events, and possible loss of service due to failure.

Stormwater Drainage Systems

PCC has a commitment to sustainable practices. As part of this commitment, the stormwater drainage systems on this campus have been designed and constructed with on-site stormwater quality treatment and disposal systems. Previously existing stormwater drainage systems for the retail center were replaced during site development.

Stormwater is collected through a system of area drains, drop inlets, and curb inlets. Landscape islands in the parking areas are designed to allow stormwater to flow into the islands through curb cuts, with the islands acting as natural filter systems before being collected in area drains. Stormwater is conveyed from the various inlets through shallow concrete pipes to stormwater management manholes for further treatment. Final disposal is through a series of dry wells for on-site infiltration. Additionally, PCC has a stormwater injection management program (SWIMP) with strict guidelines for maintaining PCC stormwater facilities.

No specific information was available for the stormwater management associated with the west campus area. Drop inlets were observed in Parking Lot F. It is likely that stormwater is conveyed to regional stormwater collection systems managed by local government agencies. The existing facilities in the west campus area (Administration Hall and Community Hall Annex) were extensively modified and the grounds around these facilities were landscaped to include garden areas to assist in stormwater management. Portions of the original stormwater conveyance system are believed to remain.

The following table is an estimate of the stormwater system components on the Southeast Campus.

Table 3: Summary of Stormwater Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
Catch basins, concrete	37	each	2004
Catch basins, concrete	4	each	1970-1990
Catch basins, concrete	6	each	2015
Area drains	40	each	2004
Stormwater manholes	8	each	2004
Water quality manholes	11	each	2004
Dry wells	31	each	2004
12-inch concrete pipe	6,550	linear feet	2004
12-inch concrete pipe	200	linear feet	2015
12-inch concrete pipe	300	linear feet	1970-1990

Most of the stormwater infrastructure is less than 25 years old on the original campus. Therefore, replacement of the stormwater components should not be needed during the evaluation period. Stormwater infrastructure in the west campus area is believed to be about 30 to 50 years old. No

problems have been reported and no visual indications of problems were noted during the site visit. Therefore, these components should not need to be replaced.

It is important to note that utility infrastructure assets normally encompass more than just a single component and will, in most situations, represent a section or group of materials, i.e. linear footage of installed piping systems. The majority of these systems will continue to operate reliably and safely beyond the ten-year planning horizon of this assessment. However, beyond the next ten years, it will be necessary to re-inspect the systems to ensure that they continue to operate reliably.

Sanitary Sewer

The sanitary sewage system for the campus is a collection and conveyance system. Because the area is relatively flat, the area is served by gravity sewers. PCC does not treat its own sewage but discharges it to the municipal sewer mains, which transport it to the regional wastewater treatment plant. The treatment plant and municipal lines were not part of the ISES evaluation.

The buildings on the original campus are directly connected to the municipal sewers along SE 82nd Avenue with an 8-inch ductile iron pipe. Other facilities at the south end of the campus and Administration Hall are connected to the municipal sewer along SE Division Street with a ductile-iron pipe of unknown size (suspected to be 8-inch diameter). The Community Hall Annex building is connected to the municipal sewer along SE Sherman Street with an 8-inch ductile iron pipe. The following table is an estimate of the sanitary pipe that serves the Southeast Campus.

Table 4: Summary of Sanitary Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
8-inch pipe	800	linear feet	2004-2014
8-inch pipe	170	linear feet	1950-1970
manholes 5-10’ depth	3	each	2004-2014
manholes 10-15’depth	2	each	1950-1970

No problems have been reported with the sanitary sewer conveyance system. Most of the sanitary sewer system is less than 20 years old and should not need to be replaced during the evaluation period. The age of the sanitary sewer components connecting Administration Hall and the Community Hall Annex may be 45 to 65 years old. However, with recent major renovations to these facilities, any problems with the sanitary sewers were likely addressed. Therefore, replacement of these sanitary sewer system components will probably not be needed during the evaluation period.

It is a good policy and a recommendation of this report to develop and conduct a preventative maintenance program for the sanitary sewer system. A vital part of that program is video monitoring the linear assets when and where feasible and jet-washing any built-up debris or solids in the lines and manholes to ensure that the pipes have the maximum flow capacity to handle peak demand. It is recommended that PCC start a program of jet-washing and CCTV inspections. The oldest and/or most

problematic lines are typically evaluated first to determine the characteristics of the typical flow and identify any urgent or critical repair or replacement needs. Routinely CCTV inspect a portion of the infrastructure every couple of years and all lines typically at least once every ten years. With the age of this system and its expected lifecycle, it is inevitable that portions will wear out and need to be repaired or replaced. The CCTV inspections will allow PCC to identify problem areas and then plan and budget for repair or replacement.

Water Distribution and Fire Protection

Both potable water and fire protection water are supplied to the campus by direct connection to the city water mains on SE Division Street. Because the site is nearly level, no pumps are needed to provide adequate water pressure. Water lines are reported to be 6 to 8 inch ductile iron. The potable water and fire protection systems appears to be properly sized and in overall good condition.

The following table is an estimate of the potable water and fire protection system components that serve the Southeast Campus.

Table 5: Summary of Potable Water and Fire Protection System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
6-inch water supply pipe	500	Linear feet	1950-1970
8-inch water supply pipe	2,500	Linear feet	2004-2014
Fire hydrants	6	Each	2004-2014

No problems with the water distribution system have been reported. Most of the system is less than 20 years old and should not need to be replaced during the evaluation period. The system serving the Administration Hall and Community Hall Annex are believed to be 45 to 65 years old. However, with recent major renovations to these facilities, any problems with the system were likely addressed. Therefore, replacement of most system components will probably not be needed during the evaluation period.

Other Considerations

In reviewing the Portland Community College Facilities Plan, improvements to site accessibility are recommended. Implementing the project recommendations in the Site Accessibility section should address most of these issues. In addition, a campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

Another recommendation is the addition of electric vehicle charging stations. No guidelines have been established for determining how many stations should be installed. Therefore, it may be better to implement these in phases, perhaps a group of 4 charging stations in one lot and the addition of additional charging stations as the demand dictates.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional inspector examined the infrastructure to determine what repairs or modifications may be necessary to restore the systems to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the site to modern standards without any anticipation of change to layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include space change, program issues, relocation, contingency, or costs that could not be identified or determined from the visual inspection and available information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 21, 2018

Inspection Team Personnel

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Client Contact

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Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Infrastructure report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of systems and components. The tool for projecting the recurring renewal costs is the Lifecycle Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the systems and components. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards, not original design parameters. This index gives the college a comparison tool for identifying worst case/best case conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory is a list of major systems and components and is based on industry standard lifecycle expectancies. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the system. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the systems and components are not included in the Lifecycle Component Inventory. For each such deficiency, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the second accessibility project identified for asset 0001 would have a project number of 0001AC02 (0001 for the asset number, AC for accessibility, and 02 being the next sequential number for an accessibility project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures needed to correct random and unpredictable deficiencies. Such projects are not related to aligning with codes or standards. Deficiencies classified as Corrective Action could have an effect on site or utility safety and usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a system to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements associated with noncritical accessibility needs

  b. actions to bring a system into compliance with current codes

  c. actions to improve the usability of the system

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE

Example: Category Code = EL5A	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	AC2B	0001AC02	01
1	PL1D	0001PL02	02
2	EL4C	0001EL03	04

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	60,392	0	0	0	0	0	0	0	0	0	0	0	0	0	$60,392
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
PLUMBING	0	0	6,158	0	0	0	0	0	0	0	0	0	0	0	$6,158
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	99,113	0	0	0	0	0	0	0	$99,113
SITE	45,778	80,905	224,525	151,786	37,594	0	0	4,934	58,295	18,304	0	37,594	0	0	$659,715
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$106,170	$80,905	$230,683	$151,786	$37,594	$0	$99,113	$4,934	$58,295	$18,304	$0	$37,594	$0	$0	$825,378
TOTAL NONRECURRING PROJECT NEEDS			$417,758	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$407,620	

CURRENT REPLACEMENT VALUE	$7,027,475
FACILITY CONDITION NEEDS INDEX	0.12
FACILITY CONDITION INDEX	0.02

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
229,657	$825,378	$3.59

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$60,392	$0	$60,392
EXTERIOR	$0	$0	$0
INTERIOR	$0	$0	$0
PLUMBING	$6,158	$0	$6,158
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$99,113	$99,113
SITE	$351,208	$308,507	$659,715
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$417,758**	**$407,620**	**$825,378**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
SE00AC02	PARKING LOT ACCESSIBILITY UPGRADES		1	Plant Adaption	33,212
SE00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	27,180
SE00SI02	SIDEWALK REPLACEMENT	G2030	1	Corrective Action	45,778
SE00SI01	SUBSURFACE UTILITY ENGINEERING	G2040	2	Plant Adaption	80,905
SE00PL01	CCTV SANITARY SEWER LINES	G3020	3	Plant Adaption	6,158
SE00SI04	ELECTRIC VEHICLE CHARGING STATIONS	G4090	3	Plant Adaption	194,553
SE00SI03	SITE WAY FINDING	G9090	3	Plant Adaption	29,973
				TOTAL	**$417,758**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
SE00	PF05	CAST IRON PIPE - 6" DIAMETER	WATER DISTRIBUTION		WEST CAMPUS	G3020	Deferred Renewal	111,483
SE00	SA03	CAST IRON PIPE - 8" DIAMETER			WEST CAMPUS	G3020	Deferred Renewal	40,303
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT A	G2020	2018	37,594
SE00	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			WEST CAMPUS	D5020	2020	9,010
SE00	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			ORIGINAL CAMPUS	D5020	2020	90,103
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT E	G2020	2021	4,934
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT C	G2020	2022	14,446
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT B	G2020	2022	15,728
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT D	G2020	2022	28,122
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT F	G2020	2023	18,304
SE00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT A	G2020	2025	37,594
							TOTAL	$407,620

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
3	SE00SI02	SIDEWALK REPLACEMENT	1	$45,778
		TOTAL FOR CORRECTIVE ACTION		**$45,778**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	SE00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	1	$27,180
2	SE00AC02	PARKING LOT ACCESSIBILITY UPGRADES	1	$33,212
4	SE00SI01	SUBSURFACE UTILITY ENGINEERING	2	$80,905
5	SE00PL01	CCTV SANITARY SEWER LINES	3	$6,158
6	SE00SI03	SITE WAY FINDING	3	$29,973
7	SE00SI04	ELECTRIC VEHICLE CHARGING STATIONS	3	$194,553
		TOTAL FOR PLANT ADAPTION		**$371,980**
		GRAND TOTAL:		**$417,758**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	SE00AC01	1	Plant Adaption	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	$27,180
2	SE00AC02	1	Plant Adaption	PARKING LOT ACCESSIBILITY UPGRADES	$33,212
				TOTAL FOR ACCESSIBILITY	**$60,392**
5	SE00PL01	3	Plant Adaption	CCTV SANITARY SEWER LINES	$6,158
				TOTAL FOR PLUMBING	**$6,158**
3	SE00SI02	1	Corrective Action	SIDEWALK REPLACEMENT	$45,778
4	SE00SI01	2	Plant Adaption	SUBSURFACE UTILITY ENGINEERING	$80,905
6	SE00SI03	3	Plant Adaption	SITE WAY FINDING	$29,973
7	SE00SI04	3	Plant Adaption	ELECTRIC VEHICLE CHARGING STATIONS	$194,553
				TOTAL FOR SITE	**$351,208**
				GRAND TOTAL:	**$417,758**

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SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

CIRCULATION PATHWAY ACCESSIBILITY UPGRADES

Project Number:	SE00AC01	**Category Code:** AC2A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	8/21/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 505, 303, 406	Not Applicable	Item Only: Floor(s) S

Description

The sidewalk from SE Division Street to the entrance for Administration Hall has a running slope greater than 5 percent, but does not have handrails. Install handrails on both sides of this sidewalk ramp. Where walkways cross or enter parking lots or drive lanes, several lack tactile warning pads have tactile warning pads that lack adequate contrast with the background pavement surface (light gray). Most crossings are not painted. Install compliant tactile pads at these locations and paint the walkway crossings. A curb cut at Parking Lot F has a cross-slope at the landing that exceeds slope requirements. Reconstruct this curb cut. The approach ramps to the crosswalks across the Parking Lot D entrance drive have side slopes that exceed 2 percent. These ramps need to be reconstructed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system	LF	30	$116	$3,482	$191	$5,730	$9,211
Install or replace tactile warning pads	EA	12	$262	$3,139	$32.55	$391	$3,530
Paint crosswalks where pathways cross drive lanes, 6-inch wide lines	EA	10	$27.50	$275	$15.40	$154	$429
Concrete curb ramp reconstruction	EA	5	$666	$3,328	$603	$3,015	$6,343
Base Material/Labor Costs				**$10,224**		**$9,289**	
Indexed Material/Labor Costs				**$10,163**		**$9,364**	**$19,526**
Construction Mark Up at 20.0%							**$3,905**
Original Construction Cost							**$23,431**
Date of Original Estimate: 8/21/2018						**Inflation**	**$0**
Current Year Construction Cost							**$23,431**
Professional Fees at 16.0%							**$3,749**
TOTAL PROJECT COST							**$27,180**

All costs shown as Present Value

PARKING LOT ACCESSIBILITY UPGRADES

Project Number:	SE00AC02	**Category Code:** AC1C	
Priority Sequence:	2		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	SITE
Date Basis:	8/21/2018	**Element:**	PARKING

Code Application:		Subclass/Savings:	Project Location:
ADAAG	502	Not Applicable	Item Only: Floor(s) S

Description

Accessible parking is provided in areas close to the main building entrances or to the main campus circulation paths. The number of accessible parking spaces is more than required. However, some of the accessible parking spaces do not have side aisles, as required. Others do not have van accessible parking or have spaces marked as van accessible, but without the eight-foot wide side aisle. These parking areas need to be reconfigured to comply with current requirements. Some accessible parking spaces have slopes of more than 2 percent and need to be reconstructed to comply with the slope requirements or need to be relocated. A few accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Handicapped parking space, including striping and signage	EA	14	$340	$4,753	$106	$1,485	$6,239
Rebuild asphalt roadway paving structure to meet slope requirements	SY	252	$28.67	$7,225	$35.84	$9,032	$16,257
ADA-compliant parking signage	EA	6	$134	$807	$90.93	$546	$1,352
			Base Material/Labor Costs	**$12,785**		**$11,063**	
			Indexed Material/Labor Costs	**$12,708**		**$11,151**	**$23,859**
					Construction Mark Up at 20.0%		**$4,772**
					Original Construction Cost		**$28,631**
Date of Original Estimate:	8/21/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$28,631**
					Professional Fees at 16.0%		**$4,581**
					TOTAL PROJECT COST		**$33,212**

All costs shown as Present Value

SIDEWALK REPLACEMENT

Project Number:	SE00SI02	**Category Code:** SI1A	
Priority Sequence:	3		
Priority Class:	Immediate	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	8/21/2018	**Element:**	PEDESTRIAN

Code Application:		Subclass/Savings:	Project Location:
ADAAG	303	Not Applicable	Item Only: Floor(s) S

Description

One older sidewalk remains in the west campus area, running from parking lot F to the north, then east along the fence parallel to SE Sherman Street. This is a narrow concrete sidewalk with some faulting at joints and some accessibility restrictions. If this sidewalk continues to be used as a circulation pathway, it should be reconstructed to meet current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair ramp construction, including handrails	VFT	2	$2,547	$5,093	$2,255	$4,509	$9,602
Replace pedestrian concrete walkways	SF	2,615	$4.23	$11,061	$4.66	$12,186	$23,247
			Base Material/Labor Costs	**$16,154**		**$16,695**	
			Indexed Material/Labor Costs	**$16,058**		**$16,829**	**$32,886**
					Construction Mark Up at 20.0%		**$6,577**
					Original Construction Cost		**$39,464**
Date of Original Estimate: 8/21/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$39,464**
					Professional Fees at 16.0%		**$6,314**
					TOTAL PROJECT COST		**$45,778**

All costs shown as Present Value

SUBSURFACE UTILITY ENGINEERING

Project Number:	SE00SI01	**Category Code:** SI4A	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	8/21/2018	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Area Wide: Floor(s) S

Description

Available information about underground utilities is lacking, making asset management difficult. To provide more comprehensive information about underground utilities, including type, size, age, and location, a level C subsurface utility engineering survey should be performed. Start with a level D survey that includes review of the existing documents and record that information on a comprehensive CAD drawing. The level C survey will include field surveying to locate visible utility items, such as manholes and vaults, and measuring invert elevations and pipe sizes. The information obtained from the level C survey will be used to field verify the information obtained from the level D survey and to correct that information, when in error.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Level D subsurface utility survey	LOT	1	$970	$970	$28,190	$28,190	$29,160
Level C subsurface utility survey	LOT	1	$2,490	$2,490	$37,590	$37,590	$40,080
			Base Material/Labor Costs	**$3,460**		**$65,780**	
			Indexed Material/Labor Costs	**$3,439**		**$66,306**	**$69,745**
					No GCM Required		**$0**
					Original Construction Cost		**$69,745**
Date of Original Estimate: 8/21/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$69,745**
					Professional Fees at 16.0%		**$11,159**
					TOTAL PROJECT COST		**$80,905**

All costs shown as Present Value

CCTV SANITARY SEWER LINES

Project Number:	SE00PL01	**Category Code:** PL4C	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	PLUMBING
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	8/21/2018	**Element:**	SANITARY WATER COLLECTION

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Where possible, monitor and record via closed circuit television (CCTV) existing flow characteristics and structural conditions of sanitary sewer lines from buildings to connection with city sewer lines. Jetwash the lines before performing the CCTV inspection.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Jetwash sewer lines	LF	970	$0.70	$679	$1.55	$1,504	$2,183
CCTV sewer lines	LF	970	$1.15	$1,116	$1.15	$1,116	$2,231
Base Material/Labor Costs				**$1,795**		**$2,619**	
Indexed Material/Labor Costs				**$1,784**		**$2,640**	**$4,424**
Construction Mark Up at 20.0%							**$885**
Original Construction Cost							**$5,308**
Date of Original Estimate: 8/21/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,308**
Professional Fees at 16.0%							**$849**
TOTAL PROJECT COST							**$6,158**

All costs shown as Present Value

SITE WAY FINDING

Project Number:	SE00SI03	**Category Code:** SI1A	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	ACCESS
Date Basis:	11/14/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

A campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wayfinding study	LOT	1	$0.00	$0	$10,000	$10,000	$10,000
Install signage	LOT	1	$10,000	$10,000	$1,500	$1,500	$11,500
Base Material/Labor Costs				**$10,000**		**$11,500**	
Indexed Material/Labor Costs				**$9,940**		**$11,592**	**$21,532**
Construction Mark Up at 20.0%							**$4,306**
Original Construction Cost							**$25,838**
Date of Original Estimate: 11/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$25,838**
Professional Fees at 16.0%							**$4,134**
TOTAL PROJECT COST							**$29,973**

All costs shown as Present Value

ELECTRIC VEHICLE CHARGING STATIONS

Project Number:	SE00SI04	**Category Code:** SI5B	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	11/14/2018	**Element:**	ELECTRICAL

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The Facilities Plan recommends the addition of electric vehicle charging stations. No guidelines have been established for determining how many stations should be installed. Therefore, it may be better to implement these in phases, perhaps a group of four charging stations in one of the major parking lots, and the addition of additional charging stations as the demand dictates.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
EV charging station, double-unit	EA	8	$12,100	$96,800	$5,400	$43,200	$140,000
			Base Material/Labor Costs	**$96,800**		**$43,200**	
			Indexed Material/Labor Costs	**$96,219**		**$43,546**	**$139,765**
						Construction Mark Up at 20.0%	**$27,953**
						Original Construction Cost	**$167,718**
Date of Original Estimate:	11/14/2018					**Inflation**	**$0**
						Current Year Construction Cost	**$167,718**
						Professional Fees at 16.0%	**$26,835**
						TOTAL PROJECT COST	**$194,553**

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SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE04	COM EXTERIOR BOLLARD LIGHTING			PRKNG LOTS B & F	16	EA	$21,057	2016	20		2036
LE04	COM EXTERIOR BOLLARD LIGHTING			SOUTH CAMPUS	7	EA	$9,212	2014	20		2034
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			ORIGINAL CAMPUS	32	EA	$140,872	2004	40		2044
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			PRKNG LOTS B & F	8	EA	$35,218	2015	40		2055
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			SOUTH CAMPUS	43	EA	$189,297	2014	40		2054
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			WEST CAMPUS	4	EA	$17,609	2016	40		2056
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			ORIGINAL CAMPUS	27	EA	$52,585	2004	40		2044
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			WEST CAMPUS	4	EA	$7,790	2000	40		2040
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			ORIGINAL CAMPUS	40	EA	$90,103	2004	20	-4	2020
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			WEST CAMPUS	4	EA	$9,010	2000	20		2020
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			ORIGINAL CAMPUS	51	EA	$222,450	2004	20	5	2029
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			PRKNG LOTS B & F	12	EA	$52,341	2015	20		2035
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			SOUTH CAMPUS	43	EA	$187,556	2014	20		2034
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			WEST CAMPUS	4	EA	$17,447	2016	20		2036
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT A	7,620	SY	$37,594	2011	7		2018

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT B	3,985	SY	$15,728	2015	7		2022
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT C	3,660	SY	$14,446	2015	7		2022
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT D	5,700	SY	$28,122	2015	7		2022
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT E	1,250	SY	$4,934	2014	7		2021
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			PARKING LOT F	3,710	SY	$18,304	2016	7		2023
FH01	FIRE HYDRANT	ORIGINAL CAMPUS			6	EA	$63,830	2004	65		2069
PF05	CAST IRON PIPE - 6" DIAMETER	WATER DISTRIBUTION		WEST CAMPUS	500	LF	$111,483	1950	50		DR
PF06	CAST IRON PIPE - 8" DIAMETER	WATER AND FIRE		ORIGINAL CAMPUS	2,000	LF	$474,157	2004	50		2054
PF06	CAST IRON PIPE - 8" DIAMETER	WATER AND FIRE		CAMPUS ADDITIONS	500	LF	$118,539	2014	50		2064
SA03	CAST IRON PIPE - 8" DIAMETER			ORIGINAL CAMPUS	650	LF	$154,101	2004	50		2054
SA03	CAST IRON PIPE - 8" DIAMETER			ORIGINAL CAMPUS ADDITIONS	150	LF	$35,562	2014	50		2064
SA03	CAST IRON PIPE - 8" DIAMETER			WEST CAMPUS	170	LF	$40,303	1950	50		DR
SA35	CONCRETE MANHOLE - 5 TO 10 FT DEEP			ORIGINAL CAMPUS	3	EA	$20,508	2004	100		2104
SA36	CONCRETE MANHOLE - 10 TO 15 FT DEEP	WATER QUALITY MANHOLE			11	EA	$225,110	2004	100		2104
SA36	CONCRETE MANHOLE - 10 TO 15 FT DEEP	DRY WELLS			31	EA	$475,801	2004	100		2104

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SA36	CONCRETE MANHOLE - 10 TO 15 FT DEEP			WEST CAMPUS	2	EA	$20,465	1950	100		2050
SD08	CONCRETE PIPE - 12" DIAMETER	STORM DRAIN PIPE		ORIGINAL CAMPUS	6,550	LF	$1,381,214	2004	100		2104
SD08	CONCRETE PIPE - 12" DIAMETER	STORM DRAIN PIPE		PARKING LOT B	200	LF	$42,174	2015	100		2115
SD08	CONCRETE PIPE - 12" DIAMETER			WEST CAMPUS	300	LF	$63,262	1970	100		2070
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP			ORIG CAMPUS PKG LOTS	37	EA	$119,579	2004	100		2104
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP			WEST CAMPUS	4	EA	$12,927	1970	100		2070
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP			PARKING LOT B	6	EA	$19,391	2015	100		2115
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	AREA DRAINS			40	EA	$96,956	2004	100		2104
SD63	CONCRETE MANHOLE - 5 TO 10 FT DEEP	STORMWATER MANHOLES			8	EA	$54,689	2004	100		2104
						Grand Total:	$4,701,725				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G3020	CAST IRON PIPE - 8" DIAMETER		170	LF	$40,303	DR
G3020	CAST IRON PIPE - 6" DIAMETER	WATER DISTRIBUTION	500	LF	$111,483	DR
				TOTAL DEFERRED RENEWAL COST	$151,786	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		7,620	SY	$37,594	2018
2018				PROJECTED COMPONENT REPLACEMENT COST	$37,594	

No Projected Component Replacement Cost for Asset No. SE00 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		40	EA	$95,590	2020
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		4	EA	$9,559	2020
2020				PROJECTED COMPONENT REPLACEMENT COST	$105,149	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,250	SY	$5,391	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$5,391	

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,985	SY	$17,702	2022
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,660	SY	$16,259	2022
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		5,700	SY	$31,651	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$65,612	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,710	SY	$21,219	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$21,219	

No Projected Component Replacement Cost for Asset No. SE00 for 2024

COMPONENT RENEWAL COST BY YEAR

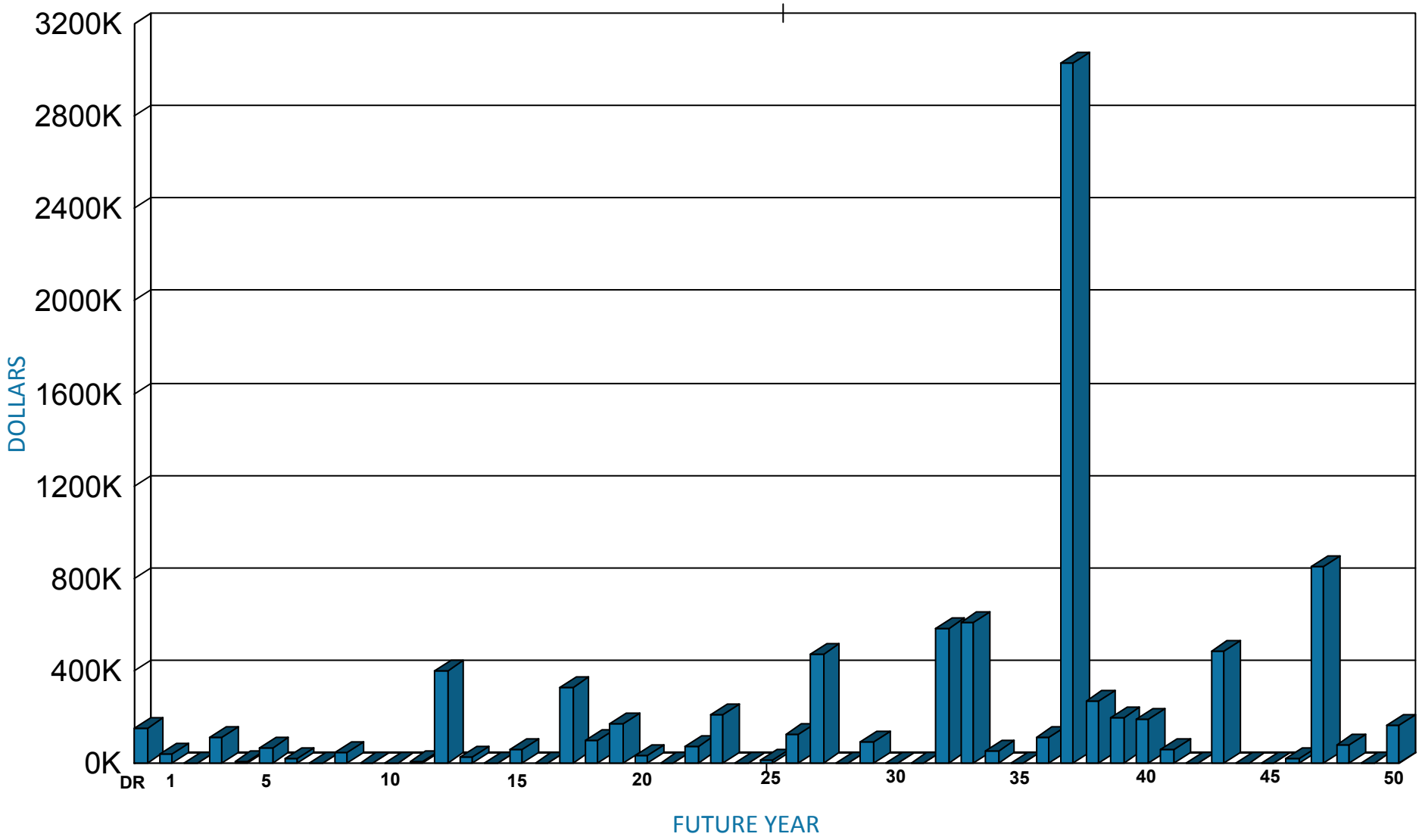
All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. SE00 for 2025

No Projected Component Replacement Cost for Asset No. SE00 for 2026

No Projected Component Replacement Cost for Asset No. SE00 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $0.32

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SECTION 5

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SE00001a 8/21/2018
Asphalt pavement at main entrance from SE 82nd Avenue
Parking Lot A

SE00002a 8/21/2018
Main entrance drive with asphalt pavement
Parking Lot A

SE00003a 8/21/2018
Speed hump in main drive
Parking Lot A

SE00004a 8/21/2018
Asphalt pavement with minor cracking
Parking Lot A

SE00005a 8/21/2018
Asphalt pavement with minor cracking
Parking Lot A

SE00006a 8/21/2018
Asphalt pavement interior parking bay
Parking Lot A

SE00007a 8/21/2018
Asphalt pavement drive lane in front of Mt. Tabor Hall
Parking Lot A

SE00008a 8/21/2018
Asphalt pavement interior parking bay
Parking Lot A

SE00009a 8/21/2018
Asphalt pavement drive lane north of Mt. Scott Hall
Parking Lot A

SE00010a 8/21/2018
Entrance to parking lot with asphalt pavement
Parking Lot B

SE00011a 8/21/2018
General view of parking lot asphalt pavement
Parking Lot B

SE00012a 8/21/2018
Drive lane access from SE 82nd Avenue
Parking Lot B

SE00013a 8/21/2018
Main drive lane through parking lot with asphalt pavement
Parking Lot B

SE00014a 8/21/2018
Main drive lane through parking lot with minor cracking
Parking Lot C

SE00015a 8/21/2018
Painted crosswalk through parking lot
Parking Lot C

SE00016a 8/21/2018
Speed hump in main drive
Parking Lot C

SE00017a 8/21/2018
Fenced parking for maintenance equipment
Parking Lot C

SE00018a 8/21/2018
Asphalt pavement drive lane north of Mt. Tabor Hall
Parking Lot C

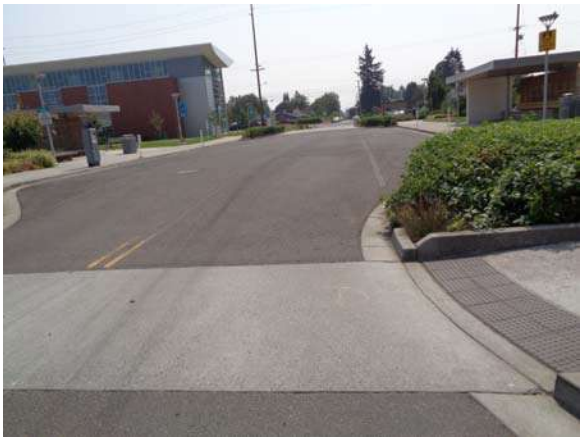
SE00019a 8/21/2018
Elevated concrete walkway across drive lane
Parking Lot D

SE00020a 8/21/2018
Drive lane, minor cracking, and speed hump
Parking Lot D

SE00021a 8/21/2018
Drive lane with asphalt pavement and longitudinal cracking
Parking Lot D

SE00022a 8/21/2018
Minor cracking in asphalt pavement
Parking Lot D

SE00023a 8/21/2018
Traffic circle in south entrance drive
Parking Lot D



SE00024a 8/21/2018
South entrance drive
Parking Lot D

SE00025a 8/21/2018
Entrance drive from SE Division Street
Parking Lot D

SE00026a 8/21/2018
Entrance drive from SE Division Street
Parking Lot E

SE00027a 8/21/2018
Drive lane with asphalt pavement
Parking Lot E

SE00028a 8/21/2018
Asphalt pavement through parking area
Parking Lot E

SE00029a 8/21/2018
Asphalt pavement through parking area
Parking Lot E

SE00030a 8/21/2018
Entrance drive from SE Division Street
Parking Lot F

SE00031a 8/21/2018
Drive lane with minor surface wear
Parking Lot F

SE00032a 8/21/2018
Asphalt pavement with minor surface wear
Parking Lot F

SE00033a 8/21/2018
Resurfaced asphalt pavement and new concrete sidewalk
Parking Lot F

SE00034a 8/21/2018
West entrance from SE 78th Avenue
Parking Lot F

SE00035a 8/21/2018
Asphalt pavement
Parking Lot F

SE00036a 8/21/2018
Minor surface erosion at storm inlet
Parking Lot F

SE00037a 8/21/2018
Longitudinal cracking in drive lane
Parking Lot F

SE00038a 8/21/2018
Concrete sidewalk through parking lot from public transportation stop
Parking Lot A

SE00039a 8/21/2018
Concrete sidewalk
North of Mt. Tabor Hall

SE00040a 8/21/2018
Bus shelter
North of Mt. Tabor Hall

SE00041a 8/21/2018
Concrete sidewalk across south entrance drive
Parking Lot D

SE00042a 8/21/2018
Concrete sidewalks at PCC shuttle stop and shelter
Parking Lot D

SE00043a 8/21/2018
Concrete sidewalk across south entrance drive near shuttle stop
Parking Lot D

SE00044a 8/21/2018
Concrete sidewalk
South of Administration Hall

SE00045a 8/21/2018
Concrete sidewalk in west campus
East of Administration Hall

SE00046a 8/21/2018
New steps at old sidewalk
East of Parking Lot F

SE00047a 8/21/2018
Worn sidewalk with faulted joints
Northwest of Community Hall Annex

SE00048a 8/21/2018
Narrow sidewalk with worn surface
North of Community Hall Annex

SE00049a 8/21/2018

New sidewalk from Parking Lot F

West campus, west of Administration hall

SE00050a 8/21/2018

Wide concrete walkway

North of Library

SE00051a 8/21/2018

Wide concrete walkway connecting to broad plaza

South of Mt. Tabor Hall

SE00052a 8/21/2018

Concrete sidewalk to SE 82nd Avenue

South of Mt. Scott Hall

SE00053a 8/21/2018

Concrete sidewalk next to Parking Lot A

East of Mt. Tabor Hall

SE00054a 8/21/2018

Concrete sidewalk on SE 82nd Avenue frontage

East of Student Commons

SE00055a 8/21/2018
Pole-mounted LED light
Parking Lot A

SE00056a 8/21/2018
Sodium-vapor light
Parking Lot A

SE00057a 8/21/2018
Pole-mounted LED lights, two lamps per pole
Parking Lot A

SE00058a 8/21/2018
Pole-mounted LED light, two lamps per pole
Parking Lot B

SE00059a 8/21/2018
Sodium-vapor light at parking lot entrance
Parking Lot B

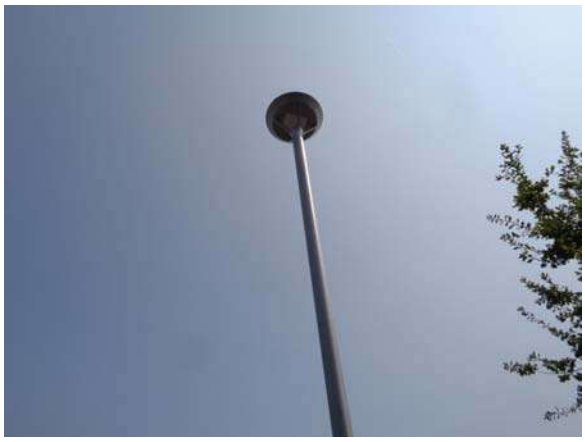
SE00060a 8/21/2018
Pole-mounted LED light, two lamps per pole
Parking Lot C

SE00061a 8/21/2018
Sodium-vapor light
Sidewalk north of Mt. Tabor Hall

SE00062a 8/21/2018
Sodium-vapor light, two lamps per pole
Sidewalk north of Mt. Tabor Hall

SE00063a 8/21/2018
Pole-mounted LED light, two lamps per pole
Parking Lot D

SE00064a 8/21/2018
Sodium-vapor light, two lamps per pole
Sidewalk west of Mt. Tabor Hall



SE00065a 8/21/2018
Round LED pole-mounted light
Parking Lot D

SE00066a 8/21/2018
Round LED pole-mounted light
Parking Lot E

SE00067a 8/21/2018
Pole mounted LED lights
Parking Lot F

SE00068a 8/21/2018
Round sodium-vapor pole-mounted light
Parking Lot F

SE00069a 8/21/2018
Bollard lights along sidewalk
West campus, west of Administration Hall

SE00070a 8/21/2018
Bollard light along new sidewalk
West campus, north of Administration Hall

SE00071a 8/21/2018
Bollard light at building entrance
North of Library

SE00072a 8/21/2018
Sidewalk crossing drive lane with no tactile warnings
Parking Lot A

SE00073a 8/21/2018
Sidewalk crossing drive lane with no tactile warnings
Parking Lot A

SE00074a 8/21/2018
Public bus stop on SE 82nd Avenue
East side

SE00075a 8/21/2018
Accessible parking at Mt. Scott Hall with undersized van parking aisle
Parking Lot A

SE00076a 8/21/2018
Accessible parking spaces without side aisles and signs too low
Parking Lot A

SE00077a 8/21/2018
Parking Lot B sidewalk tactile warnings with inadequate contrast
Parking Lot B

SE00078a 8/21/2018
Access from overflow parking with tactile warnings
Parking Lot C

SE00079a 8/21/2018
Accessible parking north of Mt. Tabor Hall
Parking Lot C

SE00080a 8/21/2018
Sidewalk crossing drive lane without tactile warnings
Parking Lot D

SE00081a 8/21/2018
Sidewalk crossing drive lane without tactile warnings
Parking Lot D

SE00082a 8/21/2018
Sidewalk connecting to residential area, tactile warnings, and information kiosk
Parking Lot D

SE00083a 8/21/2018
Sidewalk from SE Division Street with slope greater than 5 percent and no handrails
Parking Lot E

SE00084a 8/21/2018
Curb ramp sides not flared
Parking Lot E

SE00085a 8/21/2018
Curb ramp without tactile warnings
Parking Lot E

SE00086a 8/21/2018
Reconfigured accessible parking, missing signs, and no van accessible space
Parking Lot F

SE00087a 8/21/2018
Curb ramp cross-slope at landing greater than 2 percent
Parking Lot F

SE00088a 8/21/2018
Sloped sidewalk at building entrance without handrails
East of Administration Hall

SE00089a 8/21/2018
Stormwater drainage into landscape island
Parking Lot A

SE00090a 8/21/2018
Stormwater inlet in landscape island
Parking Lot A

SE00091a 8/21/2018
Stormwater drainage into landscape island, drop inlet
Parking Lot A

SE00092a 8/21/2018
Stormwater manhole lid
Parking Lot A

SE00093a 8/21/2018
Stormwater drainage into landscape island
Parking Lot B

SE00094a 8/21/2018
Stormwater manhole lid
Parking Lot D

SE00095a 8/21/2018
Curb inlet for stormwater drainage
Parking Lot D

SE00096a 8/21/2018
Bio-retention area with drainage inlet
Parking Lot D

SE00097a 8/21/2018

Teaching garden

West of Administration Hall

SE00098a 8/21/2018

Drop inlet at parking lot entrance

Parking Lot F

SE00099a 8/21/2018

Drop inlet in parking lot

Parking Lot F

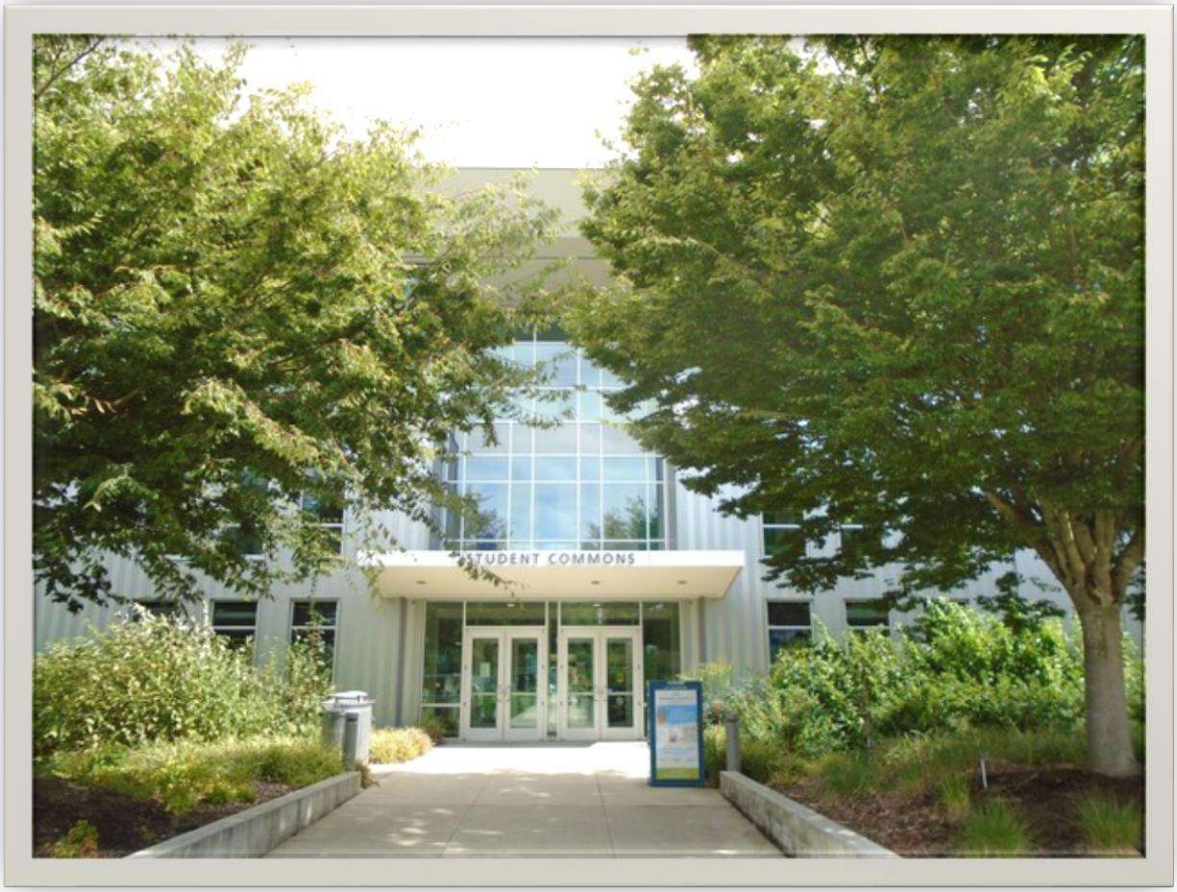
PORTLAND COMMUNITY COLLEGE

Southeast Campus

Facility Condition Assessment

Student Commons
Asset 4040

Inspected September 13, 2018



ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

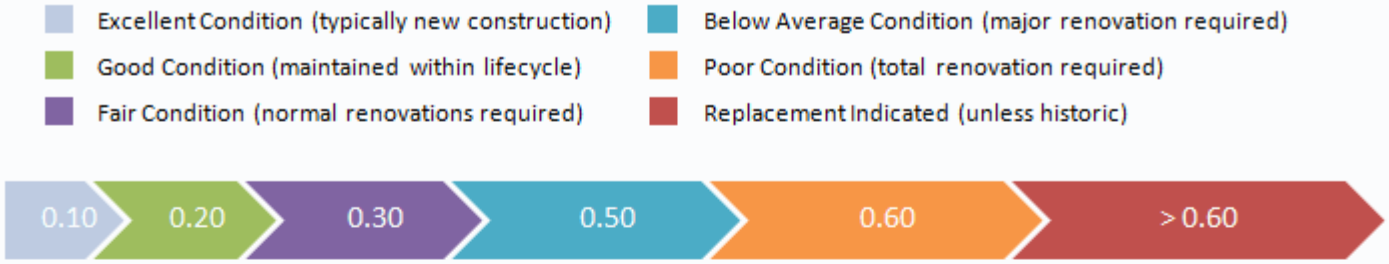
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

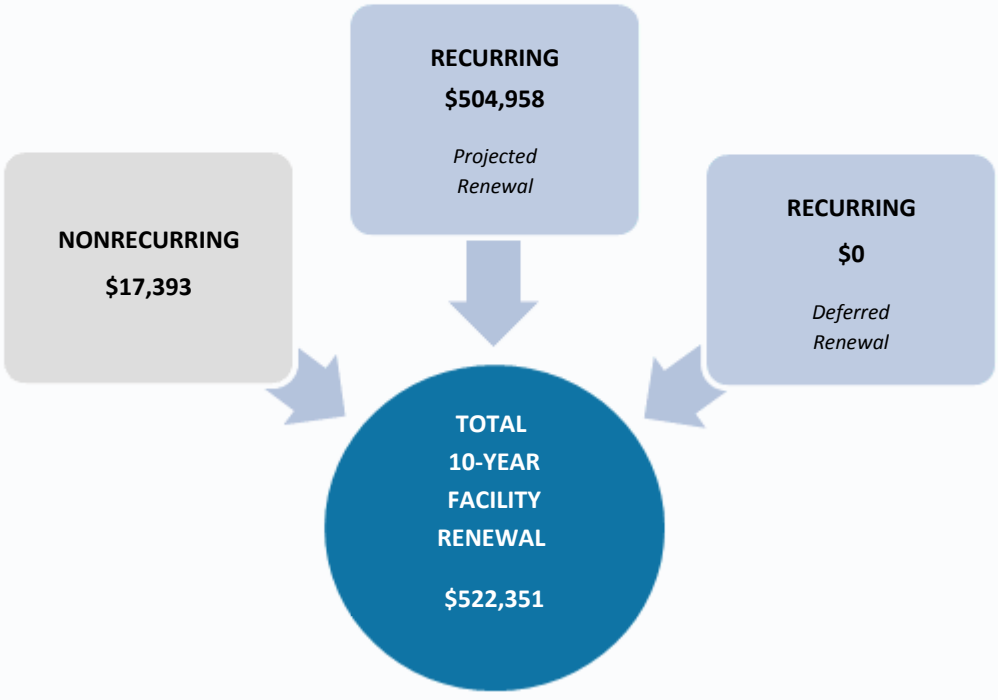
ASSET CODE	4040		
ASSET NAME	STUDENT COMMONS	**CURRENT REPLACEMENT VALUE**	$26,252,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.02
YEAR BUILT	2013	**FACILITY CONDITION INDEX**	0.00
GSF	65,960	**10-YEAR $/SF**	7.92
INSPECTION DATE	09/13/2018		

FCNI Scale

The FCNI for this asset is **0.02**



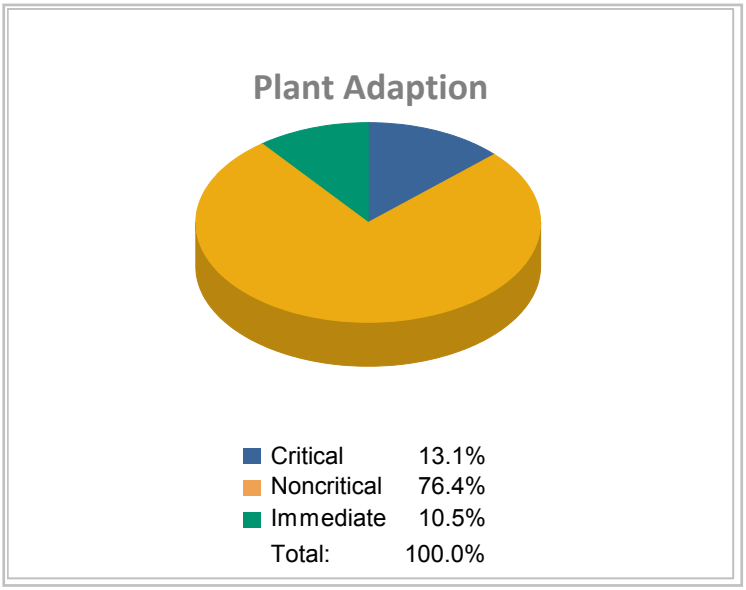
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

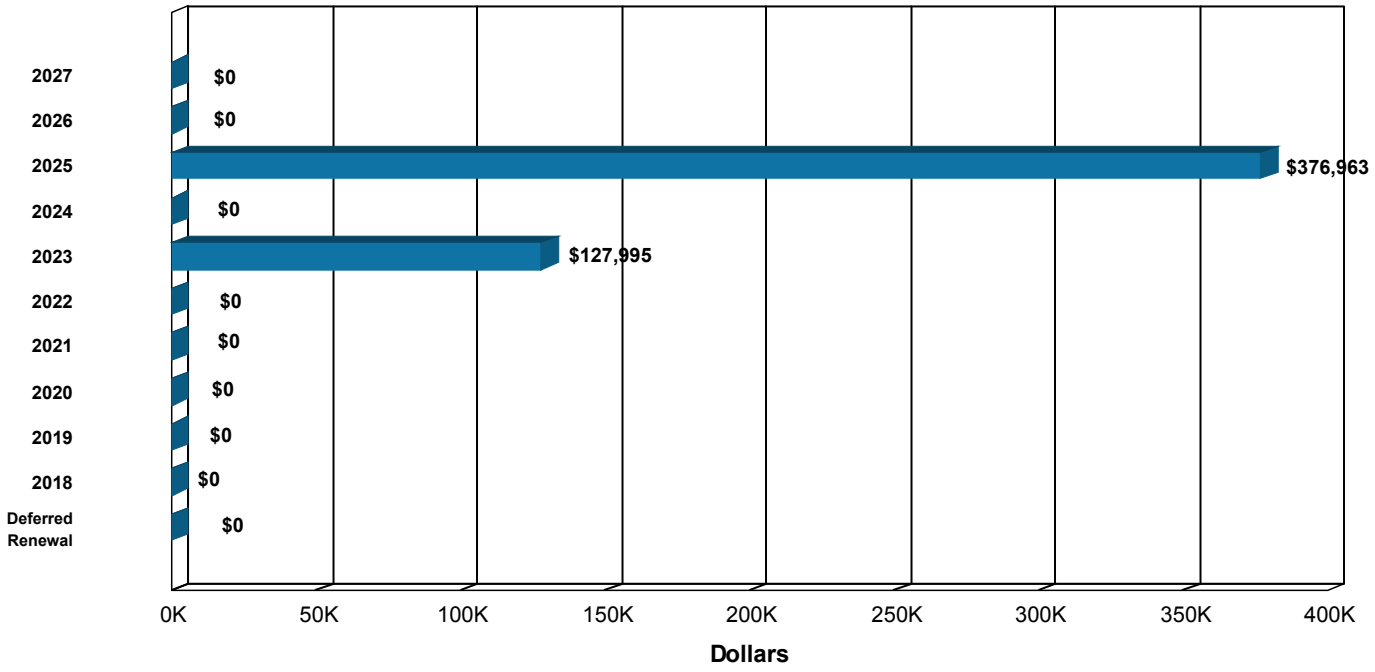
PLANT ADAPTION	
1 - Immediate	**$1,818**
2 - Critical	**$2,284**
3 - Noncritical	**$13,291**



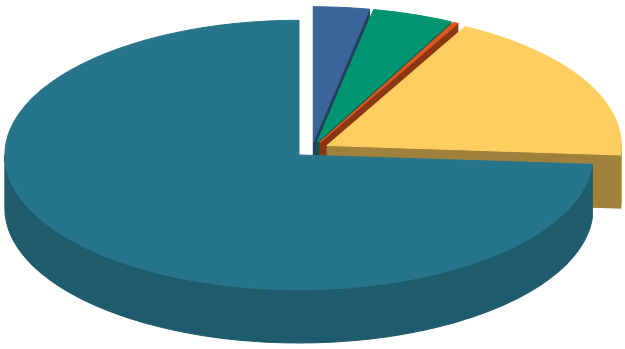
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$15,575	3%
Electrical	$0	0%
Exterior	$23,243	4%
Fire/Life Safety	$1,818	0%
Health	$0	0%
HVAC	$95,222	18%
Interiors	$386,492	74%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$522,351**	

ASSET SUMMARY

The Student Commons is a three story, 65,960 square-foot classroom and student services building on the Southeast campus of Portland Community College. Constructed in 2014 along with the adjacent Learning Commons, this building provides classrooms and administrative offices as well as housing the campus bookstore.

Information for this report was gathered during a site visit conducted on September 13, 2018.

Site

The Student Commons site is a flat parcel located north of the corner of Southeast 82nd Avenue and Southeast Division Street in Portland, Oregon. This building is east of the Learning Commons and surrounded by concrete pedestrian walkways which are in good condition. The east side of the building fronts on city sidewalks. Parking for users is provided by nearby campus lots.

Exterior Structure

The roof is a single-ply unballasted membrane that is in good condition. Aluminum-framed skylights and the aluminum shading structures are in good condition. Exterior walls are clad in brick veneer and metal panels, all of which are in good condition. The widows are aluminum and glass storefront and the doors are either flush, hollow metal or aluminum and glass storefront. The doors and windows are in good condition and should outlast the scope of this report, although the door hardware may need to be considered for upgrade toward the end of the next ten years.

Interior Finishes/Systems

Floor finishes include carpet, ceramic tile, vinyl tile, and polished, sealed concrete. These finishes are relatively new and in good condition. However, the carpet and sealed concrete floors have shorter lifecycles and will reach the end of their expected service in the next ten years. Replacement or renewal at that time is recommended. Wall finishes are paint and ceramic tile. The tile should last beyond the next ten years, but it is recommended that the painted walls be repainted within the next few years. Ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors and their associated hardware, as well as the various casework installations, are in good condition with no recommendations at this time.

Accessibility

This building was constructed in 2013 in compliance with the accessibility requirements at that time. The entrances are at grade level and some have powered door openers. The interior door hardware and

signage are compliant with accessibility standards and the restrooms provide the required accessible features. The elevator has an accessible control panel, and the stairs have compliant railings. However, the steps leading into the penthouse and from the penthouse to the roof lack the required handrails on both sides. Compliant rails should be installed at these locations. Additionally, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Dual-level drinking fountains, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

Health

Emergency eyewash stations and combination emergency eyewash/shower stations are available in the laboratories in the event of a mishap. The units are new and should continue to serve the facility during the scope of this report.

Fire/Life Safety

This building has adequate exits, exit stairs, and exit access corridors. The exit pathways are clearly marked and of adequate size. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include utility spaces such as custodial and electrical rooms. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

This facility has a modern, Silent Knight fire alarm system. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is in excellent condition with no recommendations. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

Two gas-fired boilers with heating capacities of 2,000 MBH provide heating hot water. A 225 ton air-cooled chiller on the roof provides cooling for the facility. Several pumps and an expansion tank support the boilers and chiller. This HVAC equipment appears to be well maintained and in good condition.

Two Aaon outdoor air handling units (AHUs) provide heating and cooling. The AHUs are equipped with chilled and hot water coils. Distribution equipment consists of metal ductwork with variable air volume (VAV) boxes and the controls are a digital application. Fan coil units in select areas support the system. This HVAC equipment is in excellent condition and has substantial remaining service life. However, a partial control upgrade may need to be considered on a low priority basis. Cooling is also provided by several split systems in select rooms. These units are charged with R410A DX refrigerant and are in excellent condition. They have substantial remaining service life.

Facility exhaust is provided by rooftop centrifugal and inline centrifugal fans. The fans serve restrooms, mechanical spaces, fume hoods, and general exhaust needs. They are in excellent condition and have substantial remaining service life. Additionally, the new fume hoods in select rooms are well maintained.

Electrical

Power is supplied via underground utilities at 480/277 volts to a 1,600 amp main switchboard in room E1-01. The main electrical equipment appears to be serviceable for the foreseeable future with no recommendations. The electrical distribution system consists of panelboards and dry-type transformers. Power is supplied by select panelboards at 480/277 volts or stepped down to 120/208 volts via the dry-type transformers. Additional panelboards deliver the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased with substantial remaining service life.

The interior lighting consists of suspended, lay-in, and surface-mount fixtures equipped with acrylic or no lenses. The lighting is lamped with T8 fluorescent bulbs and additional lighting is provided by recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting scheme appears to be well maintained and in good condition. The system has remaining service life beyond the scope of this report.

The exterior lighting consists of eave-mounted recessed and wall-mounted HID fixtures with additional lighting provided by pole-mounted and bollard style fixtures on the site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage.

Emergency power is provided by a district source. Two automatic transfer switches provide the power for distribution. The emergency power equipment appears to be well maintained and in good condition and should continue to serve the facility over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the exhaust fans, hot water pumps, and chilled water pumps. The VFDs are new and in excellent condition.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers protect the water systems from cross contamination. Drain piping is cast-iron with no hub connections and some plastic. The piping systems and backflow preventers are in good condition with no reported issues.

Domestic hot water is provided by a 300 MBH gas-fired water heater. A large storage tank, an expansion tank, and a pump support the water heater. The domestic water heating equipment is new and in excellent condition. The facility has a reverse osmosis system supporting the laboratories as well as a multiple pump water booster system. This equipment is in good condition and should continue to serve the facility beyond the scope of this report. Additionally, a medical air compressor and vacuum pump system serve the labs. These systems appeared to be operating properly on the day of inspection. Based on age, they have substantial remaining service life.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of the fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

This three-story facility has a Schindler hydraulic passenger elevator with a car capacity of 3,500 pounds and controlled by a proprietary solid state controller. The elevator appears to be well maintained and was operating properly on the day of inspection.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Duluth, GA 30096

Project Manager

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770.674.3141
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Date of Inspection

September 13, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$FCNI = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$FCI = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	2,284	13,291	0	0	0	0	0	0	0	0	0	0	0	$15,575
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	23,243	0	0	$23,243
INTERIOR	0	0	0	0	0	0	0	0	0	32,773	0	353,720	0	0	$386,492
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	0	0	0	95,222	0	0	0	0	$95,222
FIRE/LIFE SAFETY	1,818	0	0	0	0	0	0	0	0	0	0	0	0	0	$1,818
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$1,818	$2,284	$13,291	$0	$0	$0	$0	$0	$0	$127,995	$0	$376,963	$0	$0	$522,351
TOTAL NONRECURRING PROJECT NEEDS			$17,393	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$504,958	

CURRENT REPLACEMENT VALUE	$26,252,000
FACILITY CONDITION NEEDS INDEX	0.02
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
65,960	$522,351	$7.92

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$15,575	$0	$15,575
EXTERIOR	$0	$23,243	$23,243
INTERIOR	$0	$386,492	$386,492
PLUMBING	$0	$0	$0
HVAC	$0	$95,222	$95,222
FIRE/LIFE SAFETY	$1,818	$0	$1,818
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$17,393**	**$504,958**	**$522,351**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
4040FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	1,818
4040AC01	HANDRAIL ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,284
4040AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	13,291
				TOTAL	**$17,393**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
4040	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2023	32,773
4040	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2023	62,182
4040	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2023	33,040
4040	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			B2030	2025	6,625
4040	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	2025	16,618
4040	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2025	242,092
4040	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2025	111,628
							TOTAL	**$504,958**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	4040FS01	ELIMINATE FIRE RATING COMPROMISES	1	$1,818
2	4040AC01	HANDRAIL ACCESSIBILITY UPGRADES	2	$2,284
3	4040AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$13,291
		TOTAL FOR PLANT ADAPTION		**$17,393**
		GRAND TOTAL:		**$17,393**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	4040AC01	2	Plant Adaption	HANDRAIL ACCESSIBILITY UPGRADES	$2,284
3	4040AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$13,291
				TOTAL FOR ACCESSIBILITY	**$15,575**
1	4040FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$1,818
				TOTAL FOR FIRE/LIFE SAFETY	**$1,818**
				GRAND TOTAL:	**$17,393**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	4040FS01	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	10/5/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1,2,3

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include utility spaces such as custodial and electrical rooms. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	LOT	1	$300	$300	$1,000	$1,000	$1,300
			Base Material/Labor Costs	**$300**		**$1,000**	
			Indexed Material/Labor Costs	**$298**		**$1,008**	**$1,306**
						Construction Mark Up at 20.0%	**$261**
						Original Construction Cost	**$1,567**
Date of Original Estimate: 10/5/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$1,567**
						Professional Fees at 16.0%	**$251**
						TOTAL PROJECT COST	**$1,818**

All costs shown as Present Value

HANDRAIL ACCESSIBILITY UPGRADES

Project Number:	4040AC01	**Category Code:** AC3B	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/5/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1011.11	Not Applicable	Floor-wide: Floor(s) P,R

Description

Current life safety codes require that all stairs have handrails on both sides. The steps leading into the penthouse and from the penthouse to the roof lack the required handrails. Compliant rails should be installed at these locations.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	15	$64.33	$965	$45.09	$676	$1,641
			Base Material/Labor Costs	**$965**		**$676**	
			Indexed Material/Labor Costs	**$959**		**$682**	**$1,641**
						Construction Mark Up at 20.0%	**$328**
						Original Construction Cost	**$1,969**
Date of Original Estimate: 10/5/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$1,969**
						Professional Fees at 16.0%	**$315**
						TOTAL PROJECT COST	**$2,284**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	4040AC02	**Category Code:** AC3F	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/5/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.2	Not Applicable	Floor-wide: Floor(s) 1,2,3

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Dual-level drinking fountains, which are otherwise compliant but missing required guards, should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes	EA	5	$400	$2,000	$1,500	$7,500	$9,500
			Base Material/Labor Costs	**$2,000**		**$7,500**	
			Indexed Material/Labor Costs	**$1,988**		**$7,560**	**$9,548**
					Construction Mark Up at 20.0%		**$1,910**
					Original Construction Cost		**$11,458**
Date of Original Estimate: 10/5/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$11,458**
					Professional Fees at 16.0%		**$1,833**
					TOTAL PROJECT COST		**$13,291**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				6,330	SF	1.12	$149,597	2013	25		2038
WN05	GLASS, STOREFRONT				8,520	SF	1.12	$1,202,902	2013	40		2053
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			14	LEAF	1.00	$42,311	2013	25		2038
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			7	LEAF	1.00	$14,046	2013	40		2053
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			8	EA	1.00	$54,162	2013	20		2033
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			2	EA	1.00	$13,541	2013	20		2033
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			7	EA	1.00	$6,625	2013	12		2025
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			14	EA	1.00	$16,618	2013	12		2025
RR03	ROOF - 1-PLY, UNBALLASTED				22,000	SF	1.00	$260,360	2013	20		2033
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	AWNINGS			1,600	SF	1.00	$27,338	2013	40		2053
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				1,400	SF	1.00	$400,643	2013	35		2048
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				50	LEAF	1.00	$110,572	2013	60		2073
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			34	LEAF	1.00	$124,730	2013	60		2073
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			16	LEAF	1.00	$58,697	2013	60		2073
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			50	EA	1.00	$37,645	2013	35		2048

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			34	EA	1.00	$25,599	2013	35		2048
DR26	DOOR PANIC HARDWARE, INTERIOR				16	EA	1.00	$18,991	2013	30		2043
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS & BRK RMS	70	LF	1.00	$39,262	2013	30		2043
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			LOBBY	40	LF	1.00	$34,410	2013	40		2053
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP				9,890	SF	0.60	$917,323	2013	40		2053
IW01	WALL FINISH - APPLIED, STANDARD				86,740	SF	1.00	$242,092	2013	12		2025
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				4,570	SF	1.00	$185,092	2013	60		2073
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				9,370	SF	1.00	$111,628	2013	12		2025
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				25,760	SF	1.00	$177,283	2013	20		2033
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				2,340	SF	1.00	$82,524	2013	40		2053
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				9,370	SF	1.00	$32,773	2013	10		2023
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				42,150	SF	1.00	$469,137	2013	45		2058
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				4,680	SF	1.00	$13,062	2013	24		2037
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	SCHINDLER	0000004818	M1-2	1	EA	1.00	$257,984	2013	25		2038
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				5	EA	1.00	$13,470	2013	25		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				24	EA	1.00	$32,428	2013	35		2048
FX04	PLUMBING FIXTURE - SINK, KITCHEN				2	EA	1.00	$1,545	2013	20		2033
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	2013	50		2063
FX10	PLUMBING FIXTURE - URINAL				7	EA	1.00	$7,551	2013	35		2048
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				25	EA	1.00	$42,374	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			401	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			306	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			306	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			308	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			308	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			302	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			302	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			300	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			300	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH				1	EA	1.00	$1,080	2013	35		2048

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH			308	1	EA	1.00	$1,539	2013	35		2048
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH			306	1	EA	1.00	$1,539	2013	35		2048
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH			302	1	EA	1.00	$1,539	2013	35		2048
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH			308	1	EA	1.00	$1,539	2013	35		2048
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH			300	1	EA	1.00	$1,539	2013	35		2048
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH				1	EA	1.00	$1,539	2013	35		2048
BF01	BACKFLOW PREVENTER (<=1 INCH)	FEBCO		401	1	EA	1.00	$1,006	2013	20		2033
BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOM	0000006647	M1-1	1	EA	1.00	$7,331	2013	20		2033
BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOM		M1-1	1	EA	1.00	$7,331	2013	20		2033
PP01	DOMESTIC WATER BOOSTER SYSTEM	BP-1	0000004711	M1-1	6	HP	1.00	$76,085	2013	20		2033
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				65,960	SF	1.00	$755,301	2013	50		2063
TK07	EXPANSION TANK, STL PT (20-26 GAL)	HT-1		401	20	GAL	1.00	$1,370	2013	30		2043
WH04	WATER HEATER - COMMERCIAL, GAS (225-310 MBH INPUT)	GWH-1	0000004693	401	300	MBH	1.00	$20,715	2013	25		2038
WH17	WATER HEATER - COMMERCIAL, ELECTRIC (175-225 GAL)	ST-1	0000005929	401	200	GAL	1.00	$46,621	2013	30		2043
WT05	REVERSE OSMOSIS SYSTEM (<=5,000 GPD)	DI-1	0000006936	401	5,000	GPD	1.00	$35,309	2013	20		2033

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PD02	DRAIN PIPING SYSTEM - CLASSROOM				65,960	SF	1.00	$1,133,213	2013	60		2073
PG01	AIR COMPRESSOR - MEDICAL/LABORATORY PCKG (=10 HP), WITH DRYER	AC-4-1	4681	401	6	HP	1.00	$14,369	2013	20		2033
PG06	VACUUM PUMP - ROTARY VANE (>2<=4 HP)		0000004680	401	6	HP	1.00	$33,030	2013	20		2033
BL27	BOILER - GAS (1500-2400 MBH)	B-4-01	0000004691	401	2,000	MBH	1.00	$75,084	2013	28		2041
BL27	BOILER - GAS (1500-2400 MBH)	B-4-02	0000004692	401	2,000	MBH	1.00	$75,084	2013	28		2041
CH10	CHILLER - AIR COOLED PACKAGE (>150 TONS)	CH-4-01	0000004706	ROOF	225	TON	1.00	$246,847	2013	30		2043
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	RHEEM	0000004675	SITE	3	TON	1.00	$6,869	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	RHEEM		SITE	4	TON	1.00	$9,159	2016	25		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-4-01	0000004708	ROOF	6	TON	0.60	$8,243	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-4-02	0000004707	ROOF	8	TON	0.60	$10,991	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-4-03	0000006320	SITE	8	TON	0.60	$10,991	2013	25		2038
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	113	0000006316	113	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	113	0000006317	113	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	113	0000006318	113	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	113	0000006319	113	1	TON	0.90	$2,673	2013	30		2043

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-02	0000004817	M1-3	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-03	0000004816	E1-1	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-01	0000004821	IDF-1	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-3-01	0000004823	IDF-2	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-03	0000004820	229	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-04	0000004818	M1-2	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	113A	0000006314	113A	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-02	0000004822	213	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-03	0000004824	313	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-2-04	0000004825	401	1	TON	0.90	$2,673	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-1-01	0000004819	BDF1	1	TON	0.90	$2,673	2013	30		2043
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	RHEEM			3	TON	1.00	$5,611	2014	30		2044
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	RHEEM			4	TON	1.00	$5,986	2016	30		2046
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-4-01	0000004708	ROOF	6	TON	1.00	$19,380	2013	20		2033
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-4-02	0000004707	ROOF	8	TON	1.00	$25,840	2013	20		2033

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU20	DUCTLESS DX SPLIT SYSTEM (2 @ .75 TON)	ACCU-4-03	0000006320	SITE	8	TON	1.00	$25,840	2013	20		2033
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	STERLING	0000004679	S1-2	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	STERLING	0000004678	S1-1	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	STERLING	0000004676	V1-1	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	STERLING	0000004677	V1-2	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FC-3-01	0000004813	308	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FC-3-02	0000004814	306	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FC-3-03	0000004815	302	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FC-3-04	0000004812	300	1	HP	1.00	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FC-3-05	0000004811	317B	1	HP	1.00	$8,882	2013	35		2048
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-4-02	0000004709	ROOF	30	HP	1.00	$457,157	2013	25		2038
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-4-01	0000004710	ROOF	20	HP	1.00	$304,771	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4-07	0000004698	ROOF	1	EA	1.00	$3,773	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4-08	0000004697	ROOF	1	EA	1.00	$3,773	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4-09	0000004705	ROOF	1	EA	1.00	$3,773	2013	25		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4-01	0000004704	ROOF	1	HP	1.50	$1,981	2013	35		2048
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4-02	0000004703	ROOF	1	HP	1.50	$1,981	2013	35		2048
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4-03	0000004702	ROOF	1	HP	1.50	$1,981	2013	35		2048
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4-04	0000004699	ROOF	1	HP	1.50	$1,981	2013	35		2048
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4-05	0000004700	ROOF	1	HP	1.50	$1,981	2013	35		2048
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-4-06	0000004701	ROOF	1	HP	1.50	$1,981	2013	35		2048
HD01	HOOD, FUME	LABCONCO	0000009095	306	5	LF	1.00	$12,201	2013	35		2048
HD01	HOOD, FUME	LABCONCO	0000009096	306	5	LF	1.00	$12,201	2013	35		2048
HD01	HOOD, FUME	LABCONCO	0000009097	306	5	LF	1.00	$12,201	2013	35		2048
HD01	HOOD, FUME	LABCONCO	0000009098	306	5	LF	1.00	$12,201	2013	35		2048
HD01	HOOD, FUME	LABCONCO	0000009099	306	5	LF	1.00	$12,201	2013	35		2048
HD01	HOOD, FUME	LABCONCO	0000009100	317	5	LF	1.00	$12,201	2013	35		2048
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				65,960	SF	1.00	$2,346,474	2013	45		2058
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4-03	0000004686	401	7	HP	1.07	$12,678	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4-04	0000004687	401	7	HP	1.07	$12,678	2013	30		2043

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-4-01	0000004688	401	10	HP	1.00	$16,926	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4-01	0000004690	401	1	HP	1.00	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4-02	0000004689	401	1	HP	1.00	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	DOM		401	1	HP	1.00	$1,693	2013	30		2043
PH02	PUMP - ELECTRIC (10 - 15 HP)	CWP-4-01	0000004685	401	15	HP	1.00	$22,406	2013	35		2048
PH02	PUMP - ELECTRIC (10 - 15 HP)	CWP-4-02	0000004683	401	15	HP	1.00	$22,406	2013	35		2048
PH03	PUMP - ELECTRIC (15 - 20 HP)	CWP-4-03	0000004684	401	20	HP	1.00	$22,219	2013	35		2048
PH03	PUMP - ELECTRIC (15 - 20 HP)	CWP-4-04	0000004682	401	20	HP	1.00	$22,219	2013	35		2048
TK23	EXPANSION TANK, STL PT (50-450 GAL)	ET-1		401	50	GAL	1.00	$1,684	2013	30		2043
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				65,960	SF	1.00	$223,457	2013	20		2033
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				65,960	SF	1.00	$62,182	2013	10		2023
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				65,960	SF	1.00	$33,040	2013	10		2023
FS01	FIRE SPRINKLER SYSTEM - WET				65,960	SF	1.00	$892,349	2013	80		2093
FA01	FIRE ALARM SYSTEM - DEVICES			BDF	65,960	SF	1.00	$283,498	2013	18		2031
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNOGHT		BDF	1	EA	1.00	$13,857	2013	18		2031

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK			1	EA	1.00	$13,857	2013	18		2031
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				65,960	SF	1.00	$1,637,991	2013	50		2063
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	MDP	0000004723	E1-1	1,600	AMP	1.00	$129,616	2013	40		2053
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-4-01	0000005537	401	1	HP	1.50	$1,090	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-4-02	0000005538	401	1	HP	1.50	$1,090	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-4-03	0000005539	401	1	HP	1.50	$1,090	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-4-04	0000005540	401	1	HP	1.50	$1,090	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-4-05	0000005541	401	1	HP	1.50	$1,090	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-4-06	0000005542	401	1	HP	1.50	$1,090	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-4-01		401	1	HP	1.00	$727	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-4-02		401	1	HP	1.00	$727	2013	15		2028
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	HWP-4-03	0000005535	401	7	HP	1.07	$4,956	2013	15		2028
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	HWP-4-04	0000005536	401	7	HP	1.07	$4,956	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-4-01	0000005534	401	10	HP	1.00	$5,554	2013	15		2028
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CWP-4-01	0000005533	401	15	HP	1.00	$6,433	2013	16		2029

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CWP-4-02	0000005532	401	15	HP	1.00	$6,433	2013	16		2029
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	CWP-4-03	0000005531	401	20	HP	1.00	$7,904	2013	16		2029
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	CWP-4-04	0000005530	401	20	HP	1.00	$7,904	2013	16		2029
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			12	EA	1.00	$6,103	2013	20		2033
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			2	EA	1.00	$1,543	2013	20		2033
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	8	EA	1.00	$10,528	2013	20		2033
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	8	EA	1.00	$15,581	2013	40		2053
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	8	EA	1.00	$10,011	2013	20		2033
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				65,960	SF	1.00	$740,709	2013	20		2033
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				32,500	SF	1.00	$74,638	2013	20		2033
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	4OS1-A	0000004716	E1-1	260	AMP	1.00	$10,323	2013	25		2038
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	4LS1-A	0000004719	E1-1	260	AMP	1.00	$10,323	2013	25		2038
							Grand Total:	$15,591,822				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 4040 for DR

No Projected Component Replacement Cost for Asset No. 4040 for 2018

No Projected Component Replacement Cost for Asset No. 4040 for 2019

No Projected Component Replacement Cost for Asset No. 4040 for 2020

No Projected Component Replacement Cost for Asset No. 4040 for 2021

No Projected Component Replacement Cost for Asset No. 4040 for 2022

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		9,370	SF	$37,992	2023
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		65,960	SF	$38,303	2023
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		65,960	SF	$72,086	2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

	2023	PROJECTED COMPONENT REPLACEMENT COST	$148,381	

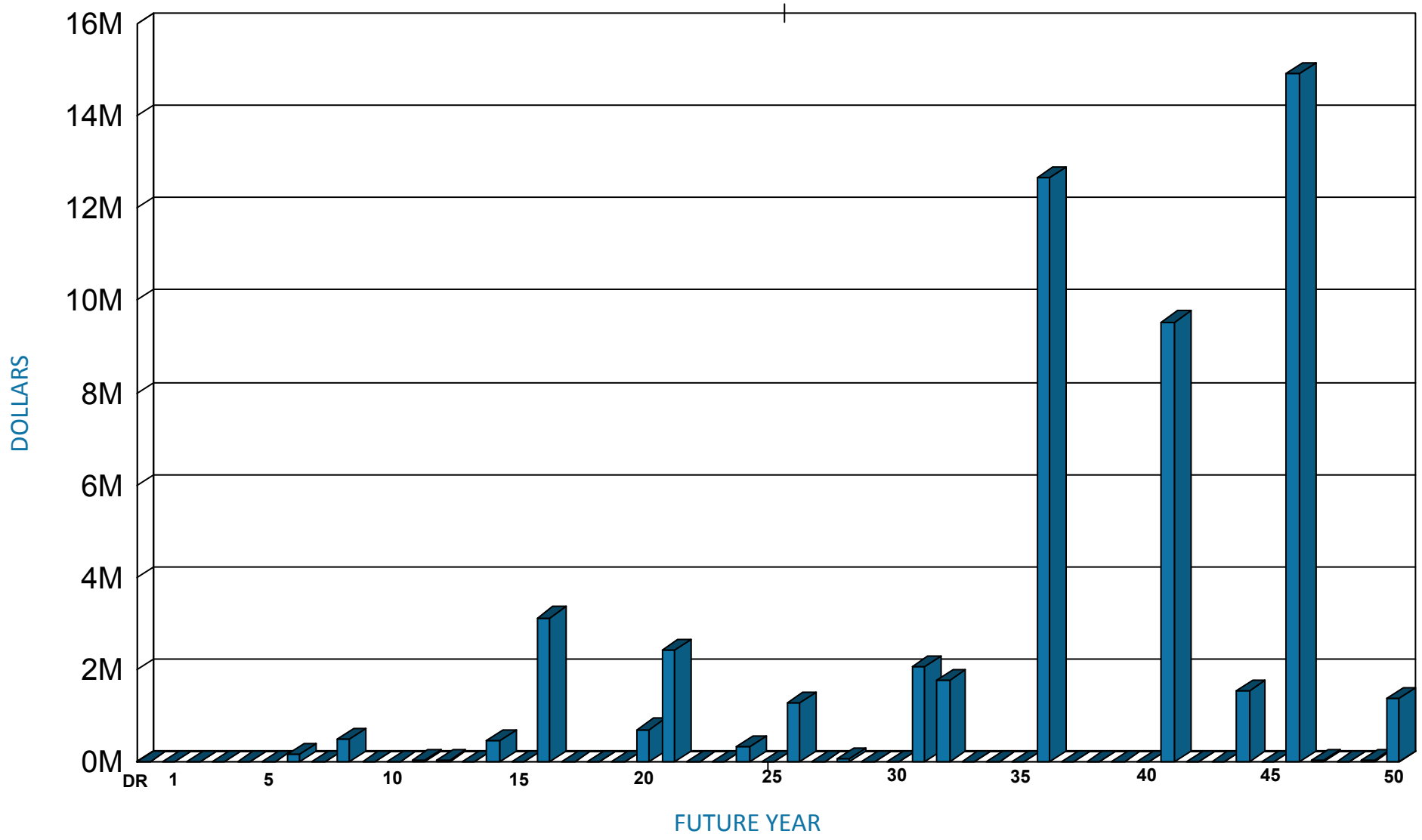
No Projected Component Replacement Cost for Asset No. 4040 for 2024

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		9,370	SF	$137,288	2025
C3010	WALL FINISH - APPLIED, STANDARD		86,740	SF	$297,742	2025
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS	7	EA	$8,148	2025
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	14	EA	$20,438	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$463,617	

No Projected Component Replacement Cost for Asset No. 4040 for 2026

No Projected Component Replacement Cost for Asset No. 4040 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $5.53

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

FS01

AC02

STUDENT COMMONS

BLDG NO. 4040

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE

FS01

AC02

STUDENT COMMONS

BLDG NO. 4040

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

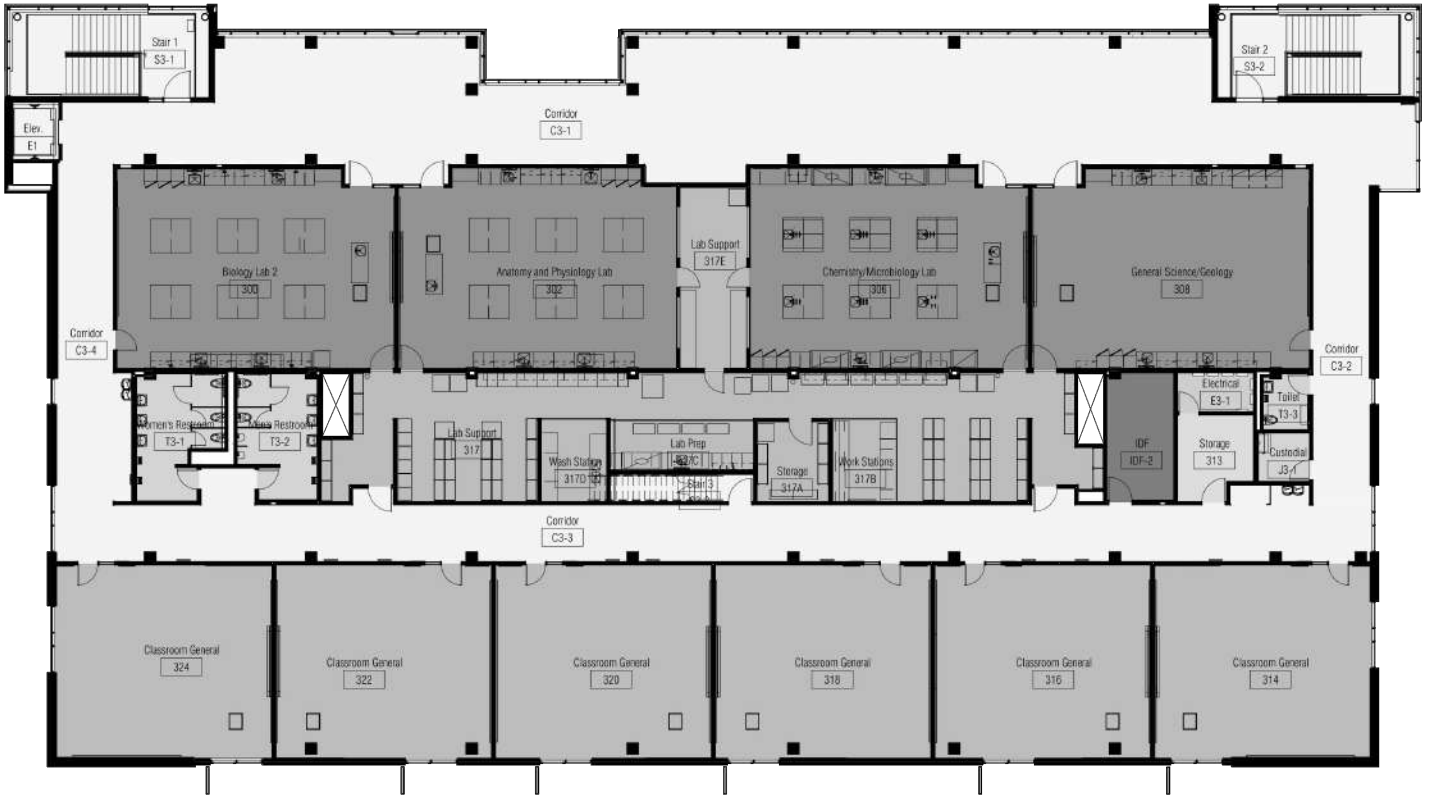
SECOND FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

ROOF
AC01

PENTHOUSE FLOOR PLAN
AC01



FS01
AC02

STUDENT
COMMONS

BLDG NO. 4040

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/19/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

4040001a 9/13/2018
Accessible elevator control panel
Elevator

4040001e 9/13/2018
Car operating panel
Elevator cab

4040002a 9/13/2018
Typical condition of membrane
Roof

4040002e 9/13/2018
Exterior AHU
Roof

4040003a 9/13/2018
Roof penetration and flashing
Roof

4040003e 9/13/2018
Condensing units
Roof

4040004a 9/13/2018

Roof drain and overflow drain

Roof

4040004e 9/13/2018

Air-cooled chiller

Roof

4040005a 9/13/2018

Skylight

Roof

4040005e 9/13/2018

Exhaust fan

Roof

4040006a 9/13/2018

Penthouse and roof-mounted equipment

Roof

4040006e 9/13/2018

Exhaust fans

Roof

4040007a 9/13/2018
Penthouse and skylight structures
Roof

4040007e 9/13/2018
Exterior AHU
Roof

4040008a 9/13/2018
Skylights
Roof

4040008e 9/13/2018
Exterior lighting
Roof

4040009a 9/13/2018
Parapet and decorative fin structures
Roof

4040009e 9/13/2018
Transformer and panelboards
Roof, room 401

4040010a 9/13/2018
Penthouse roof access steps without required handrails
Penthouse

4040010e 9/13/2018
Panelboard
Roof, room 401

4040011a 9/13/2018
Steps at the penthouse without required handrails
Stair 3

4040011e 9/13/2018
VFDs
Roof, room 401

4040012a 9/13/2018
Penthouse access stair
Stair 3

4040012e 9/13/2018
Pump equipment
Roof, room 401

4040013a 9/13/2018
Lavatories and area finishes
Room T3-2

4040013e 9/13/2018
Medical air compressor
Roof, room 401

4040014a 9/13/2018
Accessible stall, water closet, and accessories
Room T3-2

4040014e 9/13/2018
Vacuum pump system
Roof, room 401

4040015a 9/13/2018
Lavatory and hardware
Room T3-2

4040015e 9/13/2018
Eyewash station
Roof, room 401

4040016a 9/13/2018

Compliant signage

Corridor C3-3

4040016e 9/13/2018

Interior lighting

Roof, room 401

4040017a 9/13/2018

Lavatories and area finishes

Room T3-1

4040017e 9/13/2018

DI system

Roof, room 401

4040018a 9/13/2018

Toilet partitions

Room T3-1

4040018e 9/13/2018

Pump equipment

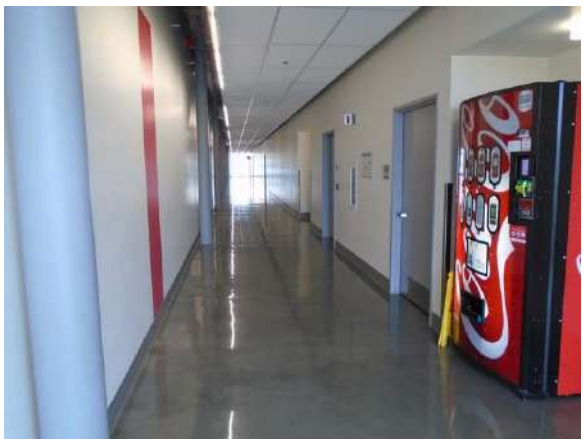
Roof, room 401

4040019a 9/13/2018
Accessible stall, water closet, and accessories
Room T3-1

4040019e 9/13/2018
Expansion tank
Roof, room 401

4040020a 9/13/2018
Accessible drinking fountain without required side protection
Corridor C3-3

4040020e 9/13/2018
Water heater
Roof, room 401



4040021a 9/13/2018
Typical corridor finishes
Corridor C3-3

4040021e 9/13/2018
Water heater
Roof, room 401

4040022a 9/13/2018
Water closet and accessories
Room T3-3

4040022e 9/13/2018
VFD and pump
Roof, room 401

4040023a 9/13/2018
Lavatory and area finishes
Room T3-3

4040023e 9/13/2018
Boilers
Roof, room 401

4040024a 9/13/2018
Detail at the glazing system
Corridor C3-2

4040024e 9/13/2018
Backflow preventer
Roof, room 401

4040025a 9/13/2018

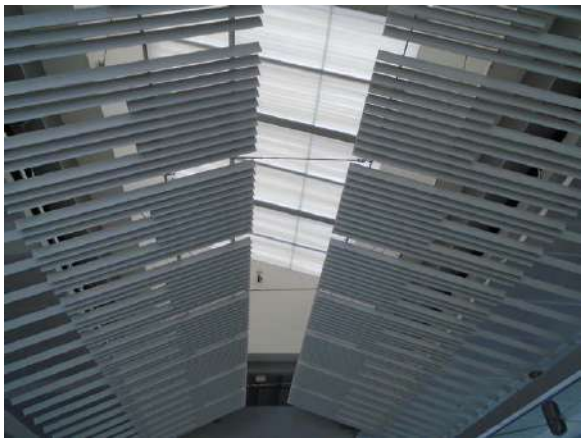
Utility sink

Room J3-1

4040025e 9/13/2018

Interior lighting

Third floor, room 324



4040026a 9/13/2018

Typical skylight above ceiling finish

Room 324

4040026e 9/13/2018

Digital thermostat

Third floor, room 322

4040027a 9/13/2018

Typical classroom finishes

Room 324

4040027e 9/13/2018

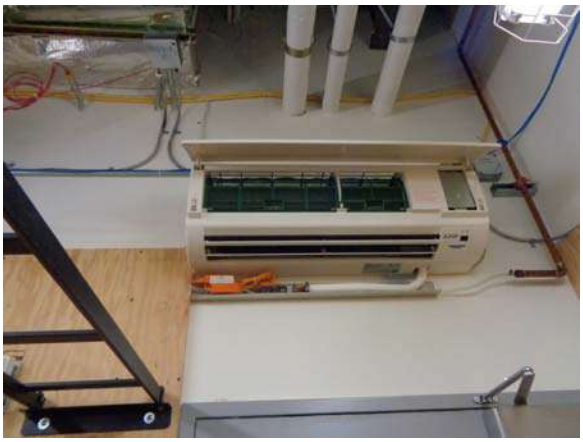
Interior lighting

Third floor, room 320

4040028a 9/13/2018
Lab area casework and finishes
Room 308

4040028e 9/13/2018
Sprinkler head
Third floor, room 316

4040029a 9/13/2018
Lab area casework and finishes
Room 308



4040029e 9/13/2018
Evaporator
Third floor, room IDF2

4040030a 9/13/2018
Lab area casework and finishes
Room 308

4040030e 9/13/2018
Evaporator
Third floor, room E3-1

4040031a 9/13/2018

Lab prep sink

Room 317C

4040031e 9/13/2018

Panelboards

Third floor, room 316

4040032a 9/13/2018

Corridor finishes

Corridor C3-1

4040032e 9/13/2018

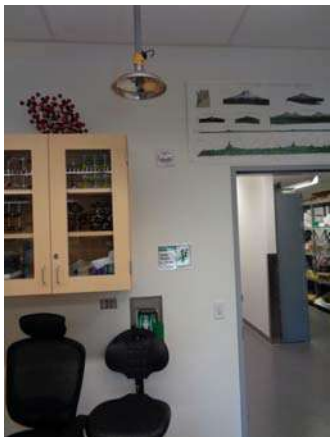
Interior lighting

Third floor, room 308

4040033a 9/13/2018

Corridor finishes

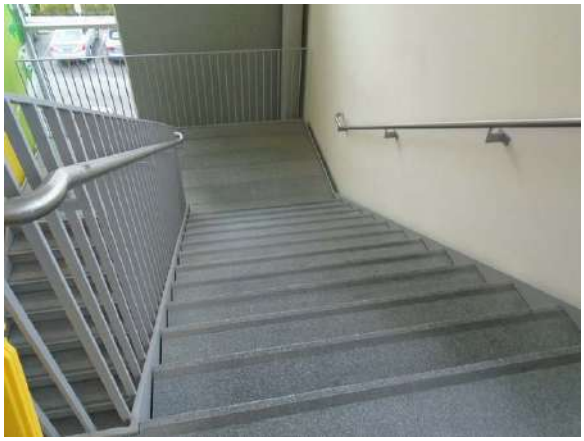
Corridor C3-1



4040033e 9/13/2018

Emergency shower/eyewash station

Third floor, room 308



4040034a 9/13/2018
Compliant guardrails and handrails
Stair 2

4040034e 9/13/2018
Fire extinguisher
Third floor, room 308

4040035a 9/13/2018
Compliant guardrails
Stair 2

4040035e 9/13/2018
Fume hoods
Third floor, room 306

4040036a 9/13/2018
Elevator lobby finishes
Corridor C2-1

4040036e 9/13/2018
Interior lighting
Third floor, room 300

4040037a 9/13/2018

Guardrail at the second floor atrium

Corridor C2-1

4040037e 9/13/2018

Interior lighting

Second floor, corridor

4040038a 9/13/2018

Typical classroom finishes

Room 200

4040038e 9/13/2018

Interior lighting

Second floor, room 208

4040039a 9/13/2018

Lab classroom fixtures and finishes

Room 208

4040039e 9/13/2018

Transformer and panelboards

Second floor, room E2-1

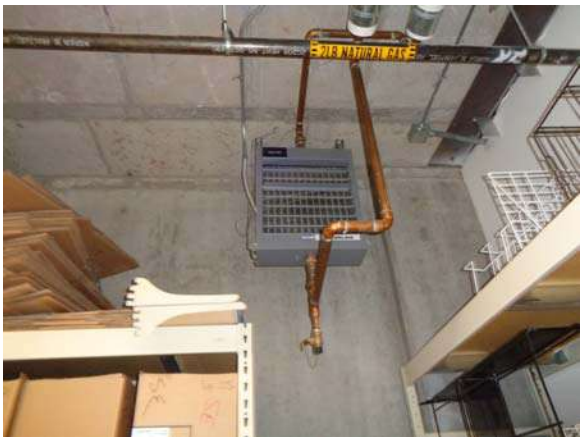
4040040a 9/13/2018
Lab classroom fixtures and finishes
Room 208

4040040e 9/13/2018
Elevator machine and controller
Second floor, room M1-2

4040041a 9/13/2018
Corridor study area finishes
Corridor C2-2

4040041e 9/13/2018
Interior lighting
First floor, room 113A

4040042a 9/13/2018
Exit stair door, hardware, and signage
Corridor C2-2



4040042e 9/13/2018
Unit heater
First floor, room 113A

4040043a 9/13/2018

Utility sink

Room J2-1

4040043e 9/13/2018

Cabinet heater

First floor, corridor

4040044a 9/13/2018

Workroom casework and sink

Room 217

4040044e 9/13/2018

Fire alarm panels

First floor, room IDF

4040045a 9/13/2018

Break room casework and sink

Room 225

4040045e 9/13/2018

Bollard

Site

4040046a 9/13/2018

Awning roof

East exterior

4040046e 9/13/2018

Condensing unit

Site

4040047a 9/13/2018

Accessible stall, water closet, and accessories

Room T1-2

4040047e 9/13/2018

Backflow preventers

First floor, room M1-1

4040048a 9/13/2018

Stairwell exit door, hardware, and signage

Stair 1

4040048e 9/13/2018

Booster pump system

First floor, room M1-1

4040049a 9/13/2018
Stair with compliant railings and low headroom cane guard
Stair 1

4040049e 9/13/2018
Switchboard
First floor, room E1-1

4040050a 9/13/2018
Accessible drinking fountains
Corridor C1-1

4040050e 9/13/2018
ATSs and panelboards
First floor, room E1-1

4040051a 9/13/2018
Atrium finishes
Corridor C1-1

4040051e 9/13/2018
Exterior lighting
West elevation

4040052a 9/13/2018

Unfirestopped penetrations

Room J1-1

4040052e 9/13/2018

Exterior lighting

Site

4040053a 9/13/2018

Bookstore typical finishes

Room 113

4040053e 9/13/2018

Exterior lighting

Site

4040054a 9/13/2018

Bookstore service doors

Room 113A

4040054e 9/13/2018

Exterior lighting

Site

4040055a 9/13/2018
Reception area casework with accessible service counter
Room 115C

4040055e 9/13/2018
Condensing units
Site

4040056a 9/13/2018
Overhead door and service counter at the bookstore
Corridor C1-2

4040056e 9/13/2018
Exterior lighting
Site

4040057a 9/13/2018
Office area finishes
Room 116

4040057e 9/13/2018
Exterior lighting
East elevation

4040058a 9/13/2018
Break room casework and sink
Room 116Q

4040058e 9/13/2018
Exterior lighting
Site

4040059a 9/13/2018
Exterior finishes and site conditions
South elevation

4040059e 9/13/2018
Exterior lighting
East elevation

4040060a 9/13/2018
Exterior finishes and site conditions
East elevation

4040061a 9/13/2018
Exterior finishes and site conditions
East elevation

4040062a 9/13/2018
Exterior finishes and site conditions
Northeast elevation

4040063a 9/13/2018
Building access and landscaping
North elevation

4040064a 9/13/2018
Exterior finishes and site conditions
West elevation

4040065a 9/13/2018
Exterior finishes and site conditions
West elevation

4040066a 9/13/2018
Exterior finishes and site conditions
West elevation

4040067a 9/13/2018
Exterior finishes and site conditions at the main entrance
West elevation

4040068a 9/13/2018
Exterior finishes and site conditions
South elevation

4040069a 9/13/2018
Typical awning at the glazing system
South elevation

4040070a 9/13/2018
Exterior along the city sidewalk
East elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	4040
Asset Name	Student Commons
Year Built or Last Energy Renovation	2013

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

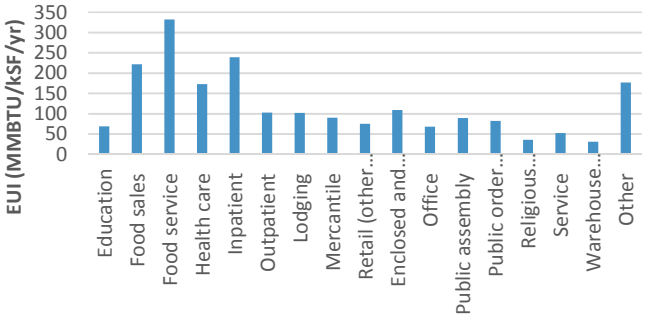
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

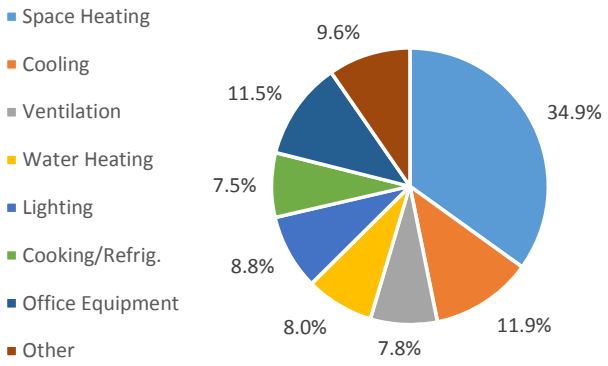


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	No ECM recommendation	

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Automotive Metals
Asset 1010

Inspected August 22, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

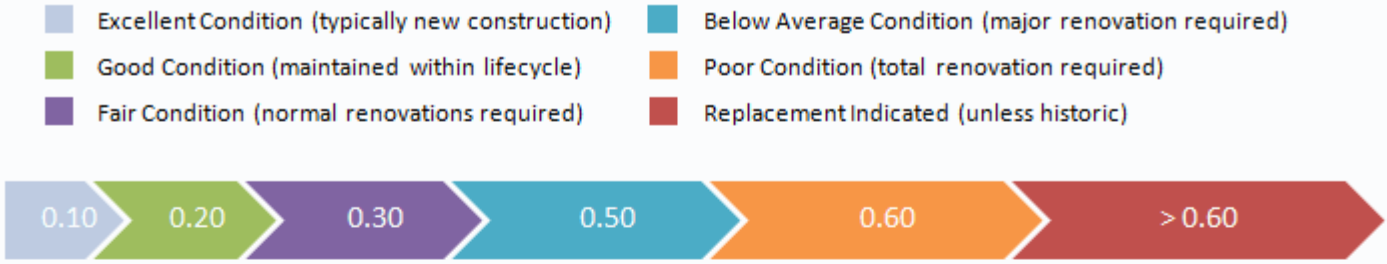
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

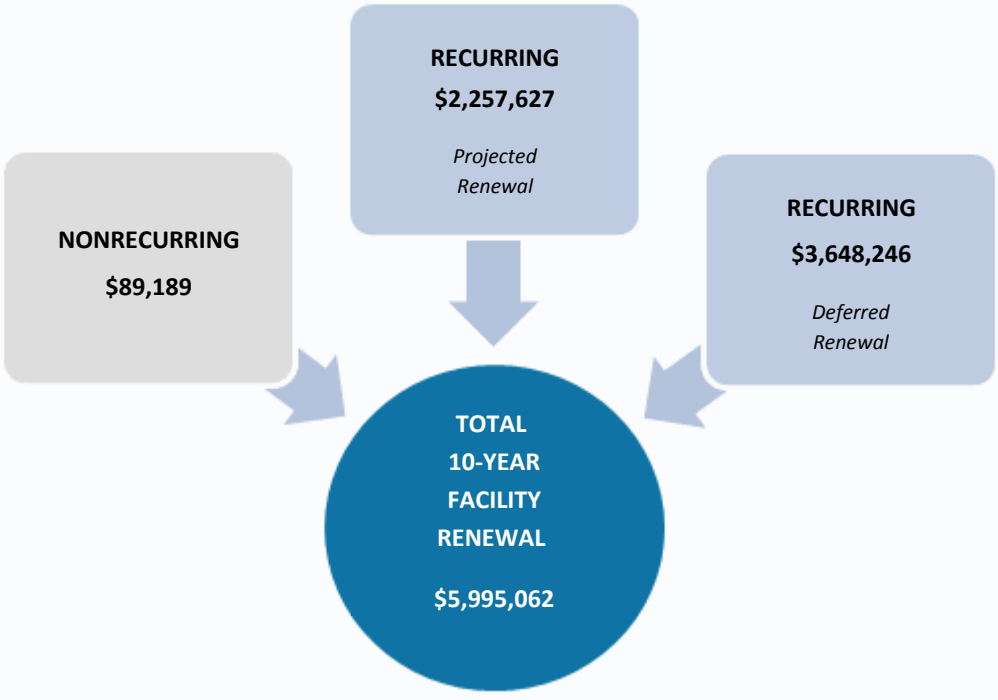
ASSET CODE	1010	**CURRENT REPLACEMENT VALUE**	$26,133,000
ASSET NAME	AUTOMOTIVE METALS	**FACILITY CONDITION NEEDS INDEX**	0.23
ASSET USE	Shops / Trade	**FACILITY CONDITION INDEX**	0.14
YEAR BUILT	1968	**10-YEAR $/SF**	83.65
GSF	71,667		
INSPECTION DATE	08/22/2018		

FCNI Scale

The FCNI for this asset is **0.23**



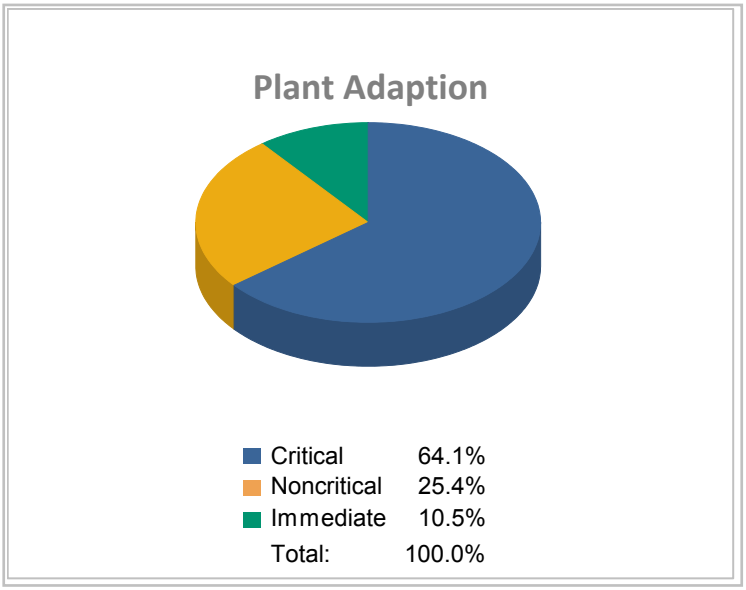
Total Facility Renewal Costs



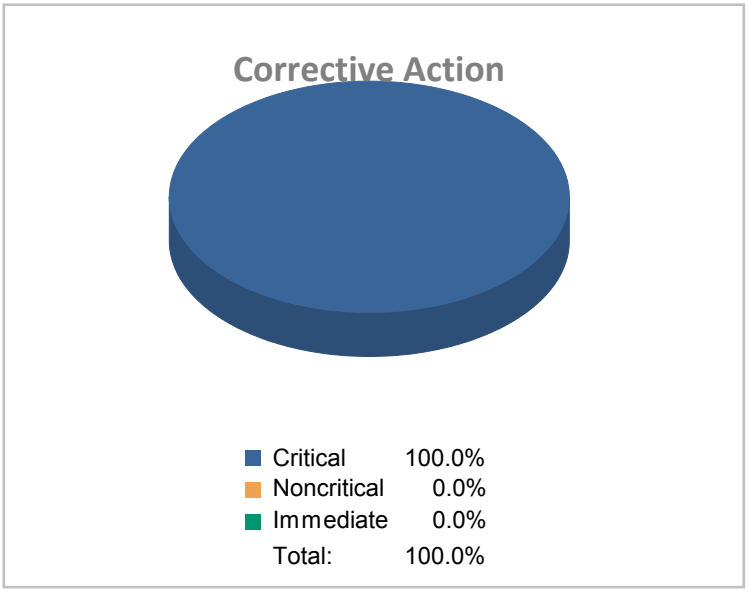
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$8,816**
2 - Critical	**$53,856**
3 - Noncritical	**$21,341**

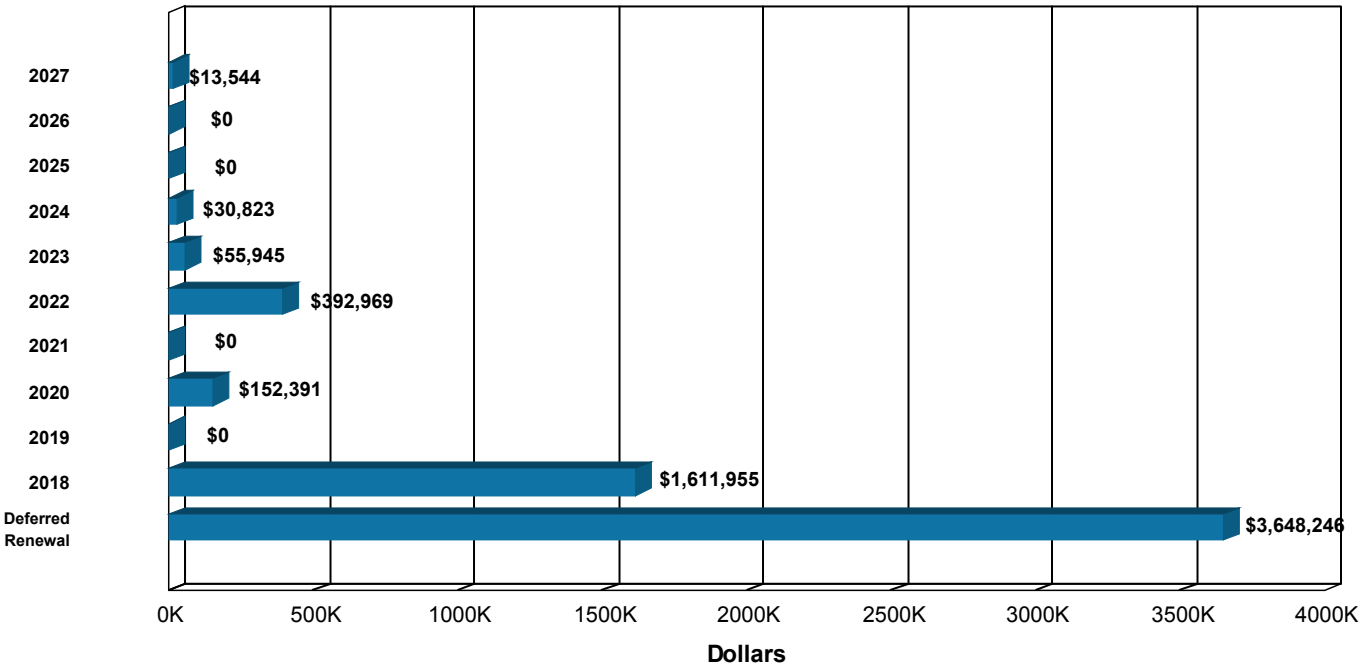


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$5,176**
3 - Noncritical	**$0**

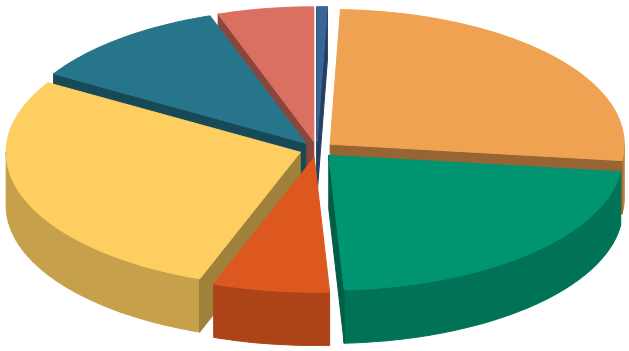


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$30,956	1%
Electrical	$1,584,456	26%
Exterior	$1,333,251	22%
Fire/Life Safety	$374,941	6%
Health	$0	0%
HVAC	$1,689,885	28%
Interiors	$661,129	11%
Plumbing	$320,444	5%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$5,995,062**	

ASSET SUMMARY

The Automotive Metals Building is a Brutalist style automotive maintenance teaching facility that was constructed in 1968. Located on the Portland Community College, Sylvania campus, it is one of six early buildings on the campus using the same concrete post-and-beam structures supporting concrete Ts. The exterior walls are brick and steel frames with fixed glass windows. The roof is flat and internally drained. The roof and intermediate floor structures overhang the exterior walls in places, similarly to the other buildings of this design. The Automotive Metals Building encloses 71,667 square feet of floor space and houses large shops and classrooms, workshops, offices, and support facilities for a variety of automotive-related metalworking and maintenance courses at the college.

Information for this report was gathered during a site visit conducted on August 22, 2018.

Site

The building is located on a sloping site just south of the Science Technology Building and north of the Heat Plant. Pedestrian access to the building is provided by concrete sidewalks on all sides of the building. Small lengths of chain link fence are used to enclose building utilities and should outlast the scope of this report. Parking is available in shared campus lots, and there is limited service and program-related vehicular access in asphalt paved lots to the east and south of the building. The landscaping is limited but adequate. No site upgrades should be necessary within the report scope.

Exterior Structure

The roof is a silver-coated, asphaltic multi-ply membrane which appears to be beyond its normal lifecycle. It is recommended that the membrane be replaced in the next few years. The exterior walls are cast concrete structural elements with infill of brick and steel-framed glazing. The brick is in good condition and the windows are single-glazed with steel frames. The steel is in good condition but the glass is beyond its normal useful life and should be replaced. The concrete is in very good condition but should be cleaned and any joints cleaned and recaulked where needed. The flush, hollow-metal and coiling-steel overhead doors appear to be original and should be replaced or refurbished as necessary.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, sealed concrete, and ceramic tile. The carpeted floors, vinyl tile floors, and some of the ceramic tile floors are in good condition and were recently replaced. The other floor finishes should be replaced or renewed within the next ten years. The interior walls are painted or finished with ceramic tile. The ceramic tile varies in age but it appears to be in acceptable condition. The painted surfaces should be repainted within ten years.

Ceilings are suspended acoustical tile systems and painted hard surfaces. The suspended systems vary in age and condition and the older suspended systems should be replaced in the near future. The newer systems should outlast the scope of this report. The painted ceilings appear to be in good condition and should not require repainting in the next ten years. Break room and workroom casework is in good condition with no recommendations.

The interior personnel doors are in good condition and no work is recommended other than hardware upgrades. However, the interior overhead coiling steel doors appear to have reached the end of their normal lifecycle and should have all operable parts inspected and refurbished or replaced as needed.

Accessibility

This building was constructed before current accessibility legislation but has been upgraded significantly to include accessible features such as grade-level access to the main entrances with powered door openers and accessible door hardware and signage. However, the configuration of several service counters and the drinking fountains is a barrier to accessibility. A wheelchair-accessible section should be incorporated into the noncompliant service counters in rooms 110, 214, and 216. Additionally, the single-level drinking fountains should be replaced with dual-level units and protected by alcove walls or cane guards. The automotive bay eyewash should also be protected by cane guards. Also, the stair into the machine access pit in the lower floor lacks one required handrail which should be added.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). Although the open stair at the southwest corner of the building has handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile. Additionally, the stair at the southeast corner of the building has missing and noncompliant handrails and guardrails which should be modified or replaced with compliant railings.

Health

The facility contains emergency eyewash stations and an emergency shower in the event of a mishap. The equipment is in good condition with no recommendations.

Fire/Life Safety

The exit pathways in this building are obvious and well marked with illuminated exit signage. Emergency lighting is provided by select fixtures tied to the emergency power network. This appears to be an adequate application and there are no recommendations.

The hatch providing access to the penthouse is difficult and dangerous to operate. It should be replaced with a model that provides easier opening and safer closing. Additionally, the roof has no parapet and it

is recommended that hard looped tie-off points be added at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a Silent Knight modern fire alarm system with the main addressable fire alarm panel in a corridor leading to room 115. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been installed in 2004. Based on industry standards, the fire alarm system will reach the end of its service life within the scope of this report. Additionally, a mass notification panel manufactured by Wheelock was inventoried in this report for information purposes.

The facility has an automatic sprinkler system and additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility is on the campus hot water and chilled water loops for heating and cooling and pumps circulate the media. Based on an estimated age, the pumps should continue to serve the facility beyond the scope of this report. One main indoor air handling unit (AHU) provides tempered air. The unit contains hot and chilled water coils and also has a matching return fan. Distribution equipment consists of metal ductwork and the systems is controlled by a digital application. The controls are believed to have been upgraded in 2013. Two fan coil units (FCUs) are part of the system. Although the HVAC system appears to be in adequate condition, based on age replacement of all of the remaining original equipment should be scheduled over the next ten years. Additionally, a partial control upgrade may need to be considered.

The facility also has split systems, rooftop package units, and window air condition units serving IT rooms, offices, and one of the laboratories. The equipment is charged with DX refrigerant for cooling and electric resistance for heating. The unitary equipment was installed at different times and appears to be in adequate condition. However, some of the equipment will be due for replacement within the scope of this report and should be considered for replacement.

Facility exhaust is provided by utility set fans that serve the restrooms, a fume hood, overhead exhaust hoods, and general exhaust needs. The fans were installed at different times and some are original. All of the remaining original units have reached lifecycle depletion and should be upgraded. The newer fans should continue to serve the facility beyond the scope of this report. The fume hood is in excellent condition with no recommendations.

Electrical

Power is supplied to the facility at 480/277 and 120/208 volts via underground utilities. Two main switchboards receive the power for distribution. This original equipment has reached the end of its service life and replacement is recommended. The electrical distribution system consists of panelboards that distribute power at 480/277 or 120/208 volts and a motor control center (MCC). Circuits are then

energized for mechanical, lighting, and general purpose loads. The system is in adequate condition although most of the equipment is original. A few new panelboards were observed in a laboratory. The original distribution equipment is nearing the end of its normal service life and should be upgraded. The newer equipment has substantial remaining service life.

The interior lighting consists of suspended, surface-mount, and lay-in fixtures with parabolic, acrylic, or no lenses. The fixtures are believed to be lamped with either T8 fluorescent and possibly LED bulbs. Occupancy sensors in select areas conserve energy. The interior lighting appears to have been installed at different times and the new lighting has substantial remaining service life. The older lighting may need to be considered for replacement within the scope of this report.

The exterior lighting consists of wall-mounted HID and non-HID fixtures as well as eave-mounted fluorescent fixtures. Additionally, lighting is provided from the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage and is in good condition with no recommendations.

Emergency power is provided by district source with an automatic transfer switch (ATS) provides the power for distribution. The GE Zenith unit was installed in 2004 and is in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve an air handling unit and exhaust fans. Although the VFDs date to 2012 and are in adequate condition, two of the units may need to be considered for replacement at the end of the next ten years due to lifecycle depletion.

Plumbing

Domestic water is supplied through a copper piping network and drain piping is constructed of cast-iron with hub-and-spigot connections. The piping systems, where they could be viewed, appear to be original and in adequate condition. However, replacement of the domestic water system should be anticipated over the scope of this report due to age.

Domestic hot water is provided by an A.O. Smith residential-grade electric water heater installed in 1997 that has an expansion tank. Although the water heater is in good condition, it has reached the end of its service life. The expansion tank should outlast the scope of this report. Additional domestic hot water may be supplied from the adjacent heat plant.

The facility contains a duplex utility compressor for use by automotive services. The Chicago Pneumatic compressor is new and was installed in 2017. It is in excellent condition with no recommendations.

Plumbing fixtures include water closets, urinals, lavatories, kitchen sinks, and utility sinks. The older kitchen and utility sinks should be replaced, while the newer kitchen sinks should outlast the scope of this report. The remaining fixtures are in good condition and should serve another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

August 22, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	8,816	799	21,341	0	0	0	0	0	0	0	0	0	0	0	$30,956
EXTERIOR	0	5,176	0	1,276,272	3,616	0	0	0	48,187	0	0	0	0	0	$1,333,251
INTERIOR	0	0	0	508,738	0	0	152,391	0	0	0	0	0	0	0	$661,129
PLUMBING	0	0	0	1,926	318,518	0	0	0	0	0	0	0	0	0	$320,444
HVAC	0	0	0	1,532,000	42,408	0	0	0	22,898	55,945	30,823	0	0	5,811	$1,689,885
FIRE/LIFE SAFETY	0	53,057	0	0	0	0	0	0	321,884	0	0	0	0	0	$374,941
ELECTRICAL	0	0	0	329,309	1,247,413	0	0	0	0	0	0	0	0	7,733	$1,584,456
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$8,816	$59,032	$21,341	$3,648,246	$1,611,955	$0	$152,391	$0	$392,969	$55,945	$30,823	$0	$0	$13,544	$5,995,062
TOTAL NONRECURRING PROJECT NEEDS			$89,189	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$5,905,873	

CURRENT REPLACEMENT VALUE	$26,133,000
FACILITY CONDITION NEEDS INDEX	0.23
FACILITY CONDITION INDEX	0.14

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
71,667	$5,995,062	$83.65

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$30,956	$0	$30,956
EXTERIOR	$5,176	$1,328,075	$1,333,251
INTERIOR	$0	$661,129	$661,129
PLUMBING	$0	$320,444	$320,444
HVAC	$0	$1,689,885	$1,689,885
FIRE/LIFE SAFETY	$53,057	$321,884	$374,941
ELECTRICAL	$0	$1,584,456	$1,584,456
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$89,189**	**$5,905,873**	**$5,995,062**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1010AC02	EXTERIOR STAIR UPGRADES	C2020	1	Plant Adaption	8,816
1010ES01	ROOF HATCH REPLACEMENT	B3010	2	Corrective Action	5,176
1010FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	53,057
1010AC03	STAIR ACCESSIBILITY IMPROVEMENT	C2010	2	Plant Adaption	799
1010AC01	DRINKING FOUNTAIN & SERVICE COUNTER ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	21,341
				TOTAL	**$89,189**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1010	EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD				B2010	Deferred Renewal	6,600
1010	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	Deferred Renewal	3,352
1010	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				B2020	Deferred Renewal	267,105
1010	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	4,013
1010	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			B2030	Deferred Renewal	78,256
1010	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	Deferred Renewal	25,006
1010	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	Deferred Renewal	125,028
1010	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				B2030	Deferred Renewal	6,284
1010	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				B2030	Deferred Renewal	8,378
1010	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	Deferred Renewal	752,251
1010	DR03	DOOR - OVERHEAD, INTERIOR			115	C1020	Deferred Renewal	2,501
1010	DR03	DOOR - OVERHEAD, INTERIOR			215	C1020	Deferred Renewal	23,339
1010	DR03	DOOR - OVERHEAD, INTERIOR			215	C1020	Deferred Renewal	23,339
1010	DR03	DOOR - OVERHEAD, INTERIOR			207	C1020	Deferred Renewal	30,007
1010	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	157,301
1010	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			C3020	Deferred Renewal	138,245

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1010	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			C3030	Deferred Renewal	134,007
1010	FX04	PLUMBING FIXTURE - SINK, KITCHEN	1994 INSTALL			D2010	Deferred Renewal	773
1010	WH21	WATER HEATER - RESIDENTIAL, ELECTRIC (<=15 GAL)	A.O. SMITH	0000001189	109	D2020	Deferred Renewal	1,153
1010	AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	SF-4	0000001387	PH	D3040	Deferred Renewal	221,108
1010	FN04	FAN - AXIAL, RETURN, 1.5" SP (7.5-10 HP) 19,500 CFM	EF-8	0000001389	PH	D3040	Deferred Renewal	18,269
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-9	0000001388	ROOF	D3040	Deferred Renewal	5,466
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-10	0000001298	PH	D3040	Deferred Renewal	5,466
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000006908	PH	D3040	Deferred Renewal	5,466
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-1	0000001292	ROOF	D3040	Deferred Renewal	5,466
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-5	0000001290	ROOF	D3040	Deferred Renewal	5,466
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-6	0000001289	ROOF	D3040	Deferred Renewal	5,466
1010	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF	0000001288	ROOF	D3040	Deferred Renewal	5,466
1010	HV20	HVAC DISTRIBUTION NETWORKS - SHOPS / TRADES, DRY LABORATORY				D3040	Deferred Renewal	1,254,360
1010	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-T	0000001297	PH	D5010	Deferred Renewal	152,434
1010	SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)		0000001550	124	D5010	Deferred Renewal	47,259
1010	SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)		0000001448	124	D5010	Deferred Renewal	129,616

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1010	EW15	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - PAINT			PENTHOUSE	B2010	2018	3,616
1010	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				D2010	2018	3,329
1010	PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY				D2020	2018	315,189
1010	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	0000001283	ROOF	D3050	2018	21,204
1010	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	0000001284	ROOF	D3050	2018	21,204
1010	SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	ORIGINAL			D5010	2018	1,132,974
1010	LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	1998 UPGRADE			D5020	2018	114,440
1010	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2020	152,391
1010	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2022	1,893
1010	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2022	46,294
1010	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	0000001175	SITE	D3030	2022	9,159
1010	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	OHP-1	0000001176	SITE	D3030	2022	11,449
1010	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	OHP-2	0000001177	SITE	D3030	2022	2,290
1010	FA01	FIRE ALARM SYSTEM - DEVICES			115	D4030	2022	308,027
1010	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		115	D4030	2022	13,857
1010	BA43	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - SHOPS / TRADES				D3060	2023	36,947

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1010	BA66	HVAC CONTROLS - MAJOR INSTRUMENTATION - SHOPS / TRADES				D3060	2023	18,998
1010	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	LENNOX	0000001286	ROOF	D3030	2024	16,029
1010	HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	LENNOX	0000001285	ROOF	D3030	2024	14,794
1010	HU13	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	CARRIER	0000001179	101	D3030	2027	2,905
1010	HU13	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	CARRIER	0000001180	101	D3030	2027	2,905
1010	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-101	0000005594	PH	D5010	2027	2,180
1010	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	EF-8	0000005593	PH	D5010	2027	5,554
							TOTAL	**$5,905,873**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
4	1010ES01	ROOF HATCH REPLACEMENT	2	$5,176
		TOTAL FOR CORRECTIVE ACTION		**$5,176**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1010AC02	EXTERIOR STAIR UPGRADES	1	$8,816
2	1010FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$53,057
3	1010AC03	STAIR ACCESSIBILITY IMPROVEMENT	2	$799
5	1010AC01	DRINKING FOUNTAIN & SERVICE COUNTER ACCESSIBILITY UPGRADES	3	$21,341
		TOTAL FOR PLANT ADAPTION		**$84,013**
		GRAND TOTAL:		**$89,189**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	1010AC02	1	Plant Adaption	EXTERIOR STAIR UPGRADES	$8,816
3	1010AC03	2	Plant Adaption	STAIR ACCESSIBILITY IMPROVEMENT	$799
5	1010AC01	3	Plant Adaption	DRINKING FOUNTAIN & SERVICE COUNTER ACCESSIBILITY UPGRADES	$21,341
				TOTAL FOR ACCESSIBILITY	**$30,956**
4	1010ES01	2	Corrective Action	ROOF HATCH REPLACEMENT	$5,176
				TOTAL FOR EXTERIOR	**$5,176**
2	1010FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$53,057
				TOTAL FOR FIRE/LIFE SAFETY	**$53,057**
				GRAND TOTAL:	**$89,189**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

EXTERIOR STAIR UPGRADES

Project Number:	1010AC02
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	9/25/2018

Category Code: AC2A

System:	ACCESSIBILITY
Component:	BUILDING ENTRY
Element:	GENERAL

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,P
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). Although the open stair at the southwest corner of the building has handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile. Additionally, the stair at the southeast corner of the building has missing and noncompliant handrails and guardrails which should be modified or replaced with compliant railings.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	3	$729	$2,188	$663	$1,989	$4,178
Railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	30	$39.07	$1,172	$32.65	$980	$2,152
			Base Material/Labor Costs	**$3,361**		**$2,969**	
			Indexed Material/Labor Costs	**$3,340**		**$2,993**	**$6,333**
					Construction Mark Up at 20.0%		**$1,267**
					Original Construction Cost		**$7,600**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$7,600**
					Professional Fees at 16.0%		**$1,216**
					TOTAL PROJECT COST		**$8,816**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1010FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/25/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	48	$304	$14,592	$488	$23,424	$38,016
Base Material/Labor Costs				**$14,592**		**$23,424**	
Indexed Material/Labor Costs				**$14,504**		**$23,611**	**$38,116**
Construction Mark Up at 20.0%							**$7,623**
Original Construction Cost							**$45,739**
Date of Original Estimate: 9/25/2018						**Inflation**	**$0**
Current Year Construction Cost							**$45,739**
Professional Fees at 16.0%							**$7,318**
TOTAL PROJECT COST							**$53,057**

All costs shown as Present Value

STAIR ACCESSIBILITY IMPROVEMENT

Project Number:	1010AC03	**Category Code:** AC3B	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/30/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Item Only: Floor(s) 1

Description

Accessibility legislation regarding handicapped access within buildings requires that goods, services, and amenities offered in buildings be generally accessible to all persons. The stair into the machine access pit in the lower floor lacks one required handrail which should be added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, per elevation change	LF	8	$39.07	$313	$32.65	$261	$574
Base Material/Labor Costs				**$313**		**$261**	
Indexed Material/Labor Costs				**$311**		**$263**	**$574**
Construction Mark Up at 20.0%							**$115**
Original Construction Cost							**$689**
Date of Original Estimate: 11/30/2018						**Inflation**	**$0**
Current Year Construction Cost							**$689**
Professional Fees at 16.0%							**$110**
TOTAL PROJECT COST							**$799**

All costs shown as Present Value

ROOF HATCH REPLACEMENT

Project Number:	1010ES01	**Category Code:** ES4B	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	ROOF
Date Basis:	9/25/2018	**Element:**	REPLACEMENT

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) R

Description

The hatch providing access to the penthouse is difficult and dangerous to operate. This hatch should be replaced with a model which provides easier opening and safer closing.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace penthouse access hatch, aluminum with lock	EA	1	$1,821	$1,821	$1,893	$1,893	$3,714
Base Material/Labor Costs				**$1,821**		**$1,893**	
Indexed Material/Labor Costs				**$1,810**		**$1,908**	**$3,718**
Construction Mark Up at 20.0%							**$744**
Original Construction Cost							**$4,462**
Date of Original Estimate: 9/25/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,462**
Professional Fees at 16.0%							**$714**
TOTAL PROJECT COST							**$5,176**

All costs shown as Present Value

DRINKING FOUNTAIN & SERVICE COUNTER ACCESSIBILITY UPGRADES

Project Number:	1010AC01	**Category Code:** AC4A	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/25/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602, 804	Not Applicable	Floor-wide: Floor(s) 1,2,P

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of several service counters and the drinking fountains is a barrier to accessibility. A wheelchair-accessible section should be incorporated into the noncompliant service counters in rooms 110, 214, and 216. Additionally, all single-level drinking fountains should be replaced with dual-level, refrigerated units and protected by alcove walls or cane guards. The automotive bay eyewash should also be protected by cane guards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	2	$1,549	$3,098	$476	$952	$4,051
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	2	$932	$1,865	$3,321	$6,643	$8,508
ADA-compliant service counter	LF	9	$199	$1,791	$106	$955	$2,745
			Base Material/Labor Costs	**$6,753**		**$8,550**	
			Indexed Material/Labor Costs	**$6,713**		**$8,619**	**$15,331**
					Construction Mark Up at 20.0%		**$3,066**
					Original Construction Cost		**$18,398**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$18,398**
					Professional Fees at 16.0%		**$2,944**
					TOTAL PROJECT COST		**$21,341**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EF02	EXTERIOR SURFACE FINISH - APPLIED, STANDARD				2,352	FLR	$6,600	1968	12	37	DR
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				1,630	SF	$3,352	1968	30	19	DR
EW15	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - PAINT			PENTHOUSE	2,500	SF	$3,616	1968	50		2018
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				1,220	SF	$267,105	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			39	LEAF	$78,256	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			2	LEAF	$4,013	1968	40	9	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				1,200	SF	$125,028	1968	30	19	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				240	SF	$25,006	1968	30	19	DR
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			3	EA	$20,311	2010	20		2030
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				4	EA	$8,378	1968	30	19	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				3	EA	$6,284	1968	30	19	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	$1,893	2010	12		2022
DR36	DOOR PANIC HARDWARE, EXTERIOR				39	EA	$46,294	2010	12		2022
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				35,980	SF	$752,251	1968	30	19	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				77	LEAF	$170,281	1968	60		2028

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR03	DOOR - OVERHEAD, INTERIOR			215	224	SF	$23,339	1968	45	4	DR
DR03	DOOR - OVERHEAD, INTERIOR			207	288	SF	$30,007	1968	45	4	DR
DR03	DOOR - OVERHEAD, INTERIOR			215	224	SF	$23,339	1968	45		DR
DR03	DOOR - OVERHEAD, INTERIOR			115	24	SF	$2,501	1968	45		DR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				77	EA	$57,973	2010	35		2045
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				150	LF	$84,132	2016	30		2046
IW01	WALL FINISH - APPLIED, STANDARD				56,360	SF	$157,301	1968	12	37	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				2,970	SF	$120,290	1968	60		2028
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				5,990	SF	$71,361	2016	12		2028
IF04	FLOORING - VINYL SHEET, STANDARD				550	SF	$6,200	2016	15		2031
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			3,920	SF	$138,245	1968	40	9	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	2016 INSTALL			440	SF	$15,517	2016	40		2056
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				43,570	SF	$152,391	2010	10		2020
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			12,040	SF	$134,007	1968	45	4	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2016 INSTALL			5,160	SF	$57,432	2016	45		2061
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				2,150	SF	$6,001	2010	24		2034

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	1994 INSTALL			5	EA	$6,756	1994	35		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2016 INSTALL			1	EA	$1,351	2016	35		2051
FX03	PLUMBING FIXTURE - LAVATORY, GANG				3	EA	$23,814	1994	35		2029
FX04	PLUMBING FIXTURE - SINK, KITCHEN	1994 INSTALL			1	EA	$773	1994	20	3	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2016 INSTALL			2	EA	$1,545	2016	20		2036
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	$3,329	1968	50		2018
FX10	PLUMBING FIXTURE - URINAL	1994 INSTALL			4	EA	$4,315	1994	35		2029
FX10	PLUMBING FIXTURE - URINAL	2016 INSTALL			1	EA	$1,079	2016	35		2051
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	1994 INSTALL			6	EA	$10,170	1994	35		2029
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	2016 INSTALL			1	EA	$1,695	2016	35		2051
FX14	PLUMBING FIXTURE - EMERGENCY SHOWER			103E	1	EA	$1,143	2013	50		2063
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000001404	209	1	EA	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			212	1	EA	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000001196	103E	2	EA	$2,160	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000001437	113	1	EA	$1,080	2013	35		2048
PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY				71,667	SF	$315,189	1968	50		2018

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
TK01	WATER TANK (<25 GAL)	AMTROL EXPAN TANK	0000006807	0000006807	5	GAL	$1,087	2010	30		2040
WH21	WATER HEATER - RESIDENTIAL, ELECTRIC (<=15 GAL)	A.O. SMITH	0000001189	109	10	GAL	$1,153	1997	15	5	DR
PD20	DRAIN PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY				71,667	SF	$472,662	1968	60		2028
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	CHICAGO PNEUMATIC	0000007679	121	10	HP	$19,349	2017	25		2042
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	CHICAGO PNEUMATIC	0000007680	121	10	HP	$19,349	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	LENNOX	0000001286	ROOF	7	TON	$16,029	1999	25		2024
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	0000001175	SITE	4	TON	$9,159	1997	25		2022
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	OHP-1	0000001176	SITE	5	TON	$11,449	1997	25		2022
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	OHP-2	0000001177	SITE	1	TON	$2,290	1997	25		2022
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004659	SITE	2	TON	$4,580	2013	25		2038
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	LENNOX	0000001285	ROOF	12	TON	$14,794	1999	25		2024
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005590	IDF	2	TON	$4,648	2013	30		2043
HU13	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	CARRIER	0000001179	101	17	KW	$2,905	1997	30		2027
HU13	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	CARRIER	0000001180	101	17	KW	$2,905	1997	30		2027
HU22	PTAC, DX/ HP COOL, ELEC HEAT (0.5-1.25 TON)	WINDOW AC		206	1	TON	$2,283	2005	25		2030
HU22	PTAC, DX/ HP COOL, ELEC HEAT (0.5-1.25 TON)	WINDOW AC		206	1	TON	$2,283	2005	25		2030

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU-105	0000005455	103C	1	HP	$8,882	2013	35		2048
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU-4	0000005458	103	1	HP	$8,882	2013	35		2048
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	SF-4	0000001387	PH	40	HP	$221,108	1968	35	14	DR
FN04	FAN - AXIAL, RETURN, 1.5" SP (7.5-10 HP) 19,500 CFM	EF-8	0000001389	PH	10	HP	$18,269	1968	35	14	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-9	0000001388	ROOF	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-10	0000001298	PH	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-7	0000001299	PH	1	HP	$5,466	1993	40		2033
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000006908	PH	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-1	0000001292	ROOF	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-2	0000001293	ROOF	1	HP	$5,466	2013	40		2053
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-3	0000001294	ROOF	1	HP	$5,466	1999	40		2039
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-4	0000001291	ROOF	1	HP	$5,466	2013	40		2053
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-5	0000001290	ROOF	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-6	0000001289	ROOF	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF	0000001288	ROOF	1	HP	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-101	0000005595	ROOF	1	HP	$5,466	2013	40		2053

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HD01	HOOD, FUME	LABCONCO	0000009108	103E	5	LF	$12,201	2013	35		2048
HV20	HVAC DISTRIBUTION NETWORKS - SHOPS / TRADES, DRY LABORATORY				71,667	SF	$1,254,360	1968	45	4	DR
PH01	PUMP - ELECTRIC (<=10 HP)	CP-15	0000001295	PH	1	HP	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	CP-16	0000001564	125	1	HP	$1,693	2013	30		2043
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	0000001283	ROOF	5	TON	$21,204	1993	25		2018
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	0000001284	ROOF	5	TON	$21,204	1993	25		2018
BA20	HVAC CONTROLS - TERMINAL ASSEMBLIES - SHOPS / TRADES, DRY LABORATORY				71,667	SF	$125,617	2013	20		2033
BA43	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - SHOPS / TRADES				71,667	SF	$36,947	2013	10		2023
BA66	HVAC CONTROLS - MAJOR INSTRUMENTATION - SHOPS / TRADES				71,667	SF	$18,998	2013	10		2023
FS01	FIRE SPRINKLER SYSTEM - WET				71,667	SF	$969,557	1968	80		2048
FA01	FIRE ALARM SYSTEM - DEVICES			115	71,667	SF	$308,027	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		115	1	EA	$13,857	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		124	1	EA	$13,857	2010	18		2028
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-T	0000001297	PH	2	EA	$152,434	1968	25	24	DR
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	ORIGINAL			66,667	SF	$1,132,974	1968	50		2018
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	2013 UPGRADE			5,000	SF	$84,973	2013	50		2063

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)		0000001550	124	600	AMP	$47,259	1968	40	9	DR
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)		0000001448	124	1,600	AMP	$129,616	1968	40	9	DR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-101	0000005594	PH	3	HP	$2,180	2012	15		2027
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	EF-8	0000005593	PH	10	HP	$5,554	2012	15		2027
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	SF-4	0000005592	PH	40	HP	$12,316	2012	18		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			8	EA	$4,068	2010	20		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			25	EA	$12,714	2008	20		2028
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			9	EA	$6,944	2010	20		2030
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	1998 UPGRADE			21,667	SF	$114,440	1998	20		2018
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	2013 UPGRADE			50,000	SF	$264,087	2013	20		2033
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				40,000	SF	$91,862	2013	20		2033
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	GE ZENITH	0000009104	124	50	AMP	$2,955	2004	25		2029
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT				70	LF	$3,388	2000	30		2030
						Grand Total:	$8,751,899				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		1,630	SF	$3,352	DR
B2010	EXTERIOR SURFACE FINISH - APPLIED, STANDARD		2,352	FLR	$6,600	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM		1,220	SF	$267,105	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW	39	LEAF	$78,256	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	2	LEAF	$4,013	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		1,200	SF	$125,028	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		240	SF	$25,006	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		4	EA	$8,378	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		3	EA	$6,284	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		35,980	SF	$752,251	DR
C1020	DOOR - OVERHEAD, INTERIOR		224	SF	$23,339	DR
C1020	DOOR - OVERHEAD, INTERIOR		288	SF	$30,007	DR
C1020	DOOR - OVERHEAD, INTERIOR		224	SF	$23,339	DR
C1020	DOOR - OVERHEAD, INTERIOR		24	SF	$2,501	DR
C3010	WALL FINISH - APPLIED, STANDARD		56,360	SF	$157,301	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL	3,920	SF	$138,245	DR
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL	12,040	SF	$134,007	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	1994 INSTALL	1	EA	$773	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (<=15 GAL)	A.O. SMITH	10	GAL	$1,153	DR
D3040	AIR HANDLING UNIT - INDOOR (35-45 HP)	SF-4	40	HP	$221,108	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (7.5-10 HP) 19,500 CFM	EF-8	10	HP	$18,269	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-9	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-10	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-1	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-5	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	E-6	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF	1	HP	$5,466	DR
D3040	HVAC DISTRIBUTION NETWORKS - SHOPS / TRADES, DRY LABORATORY		71,667	SF	$1,254,360	DR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-T	2	EA	$152,434	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)		600	AMP	$47,259	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)		1,600	AMP	$129,616	DR
				TOTAL DEFERRED RENEWAL COST	**$3,648,246**	

2018						
UNI-FORMAT	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY		2	EA	$3,329	2018

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2020	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY		71,667	SF	$315,189	2018
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	5	TON	$21,204	2018
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	5	TON	$21,204	2018
D5010	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	ORIGINAL	66,667	SF	$1,132,974	2018
D5020	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	1998 UPGRADE	21,667	SF	$114,440	2018
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - PAINT		2,500	SF	$3,616	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,611,955**	

No Projected Component Replacement Cost for Asset No. 1010 for 2019

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		43,570	SF	$161,672	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$161,672**	

No Projected Component Replacement Cost for Asset No. 1010 for 2021

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	4	TON	$10,309	2022
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	OHP-1	5	TON	$12,886	2022
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	OHP-2	1	TON	$2,577	2022
D4030	FIRE ALARM SYSTEM - DEVICES		71,667	SF	$346,687	2022
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$15,596	2022
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$2,130	2022
B2030	DOOR PANIC HARDWARE, EXTERIOR		39	EA	$52,104	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$442,290**	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - SHOPS / TRADES		71,667	SF	$22,023	2023
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - SHOPS / TRADES		71,667	SF	$42,832	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$64,855**	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	LENNOX	7	TON	$19,139	2024
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	LENNOX	12	TON	$17,665	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$36,804**	

COMPONENT RENEWAL COST BY YEAR

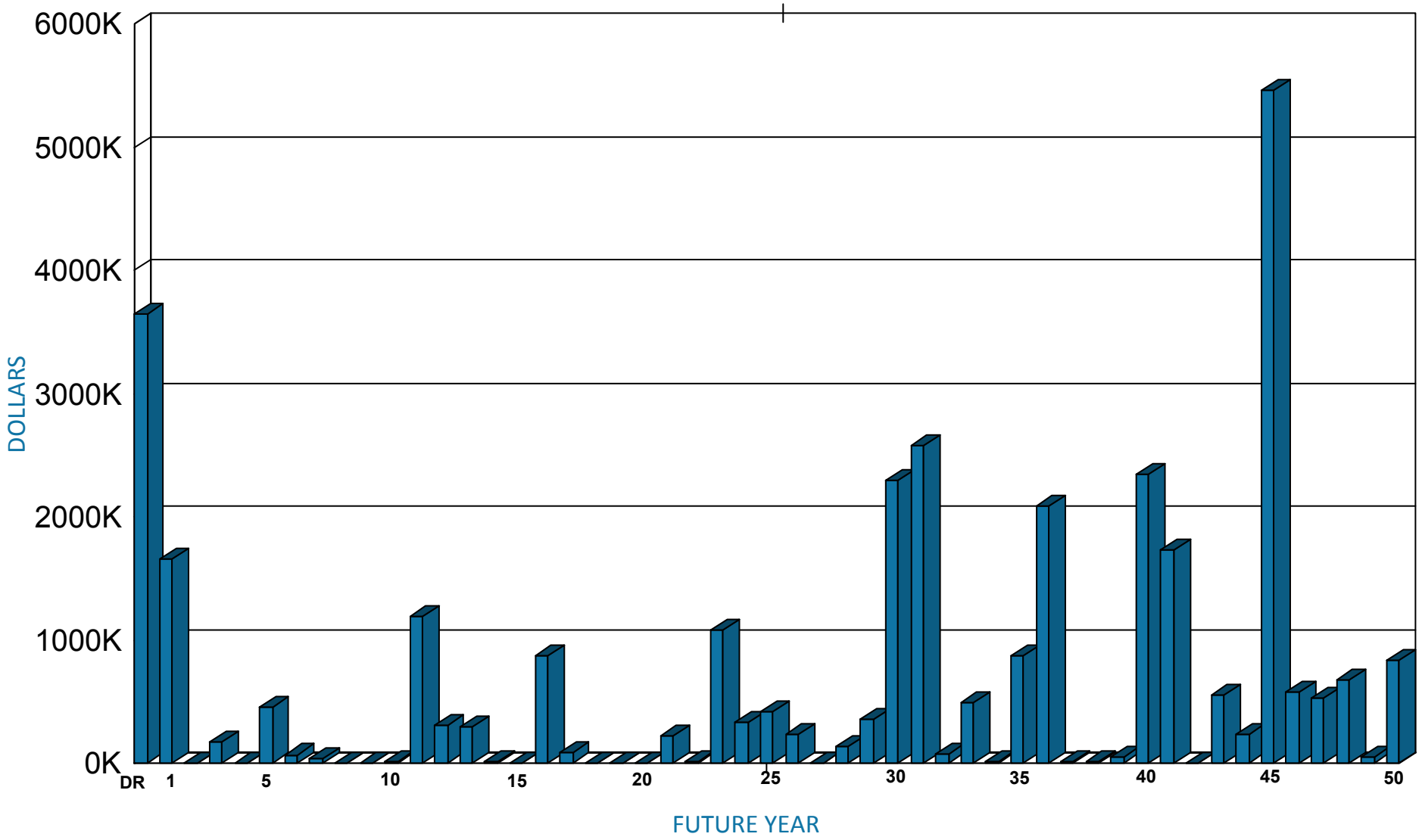
All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1010 for 2025

No Projected Component Replacement Cost for Asset No. 1010 for 2026

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	CARRIER	17	KW	$3,791	2027
D3030	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	CARRIER	17	KW	$3,791	2027
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-101	3	HP	$2,844	2027
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	EF-8	10	HP	$7,246	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$17,672	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $4.36

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

AC01 AC02

AUTOMOTIVE
METALS

BLDG NO. 1010

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/3/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

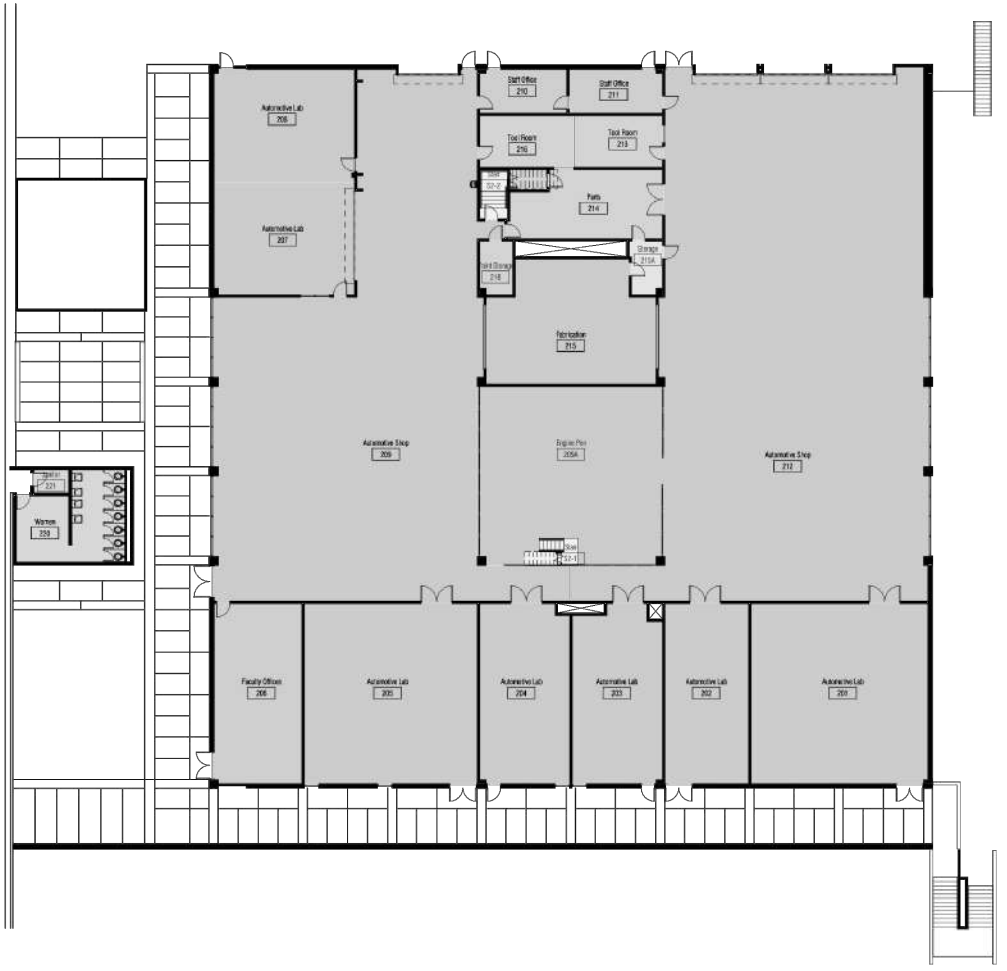
PORTLAND COMMUNITY COLLEGE

ROOF
FS01

ES01

PENTHOUSE FLOOR PLAN

AC01 AC02



AC01 AC02

AUTOMOTIVE
METALS

BLDG NO. 1010

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER
APPLIES TO
ONE ROOM ONLY

PROJECT NUMBER
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ONE ITEM ONLY

PROJECT NUMBER
APPLIES TO
ENTIRE BUILDING

PROJECT NUMBER
APPLIES TO
ENTIRE FLOOR

PROJECT NUMBER
APPLIES TO A SITUATION
OF UNDEFINED EXTENTS

PROJECT NUMBER
APPLIES TO AREA
AS NOTED

Date: 12/3/2018
Drawn by: A.W.
Project No. 18-064

SECOND
FLOOR
PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1010001a 8/22/2018
Roof membrane and edge with no fall protection
Roof

1010001e 8/22/2018
Variable frequency drives
Penthouse

1010002a 8/22/2018
Penthouse roof access
Roof

1010002e 8/22/2018
Supply fan
Penthouse

1010003a 8/22/2018
Roof drain and patched membrane
Roof

1010003e 8/22/2018
Exhaust fan
Penthouse

1010004a 8/22/2018
Penthouse exterior finish
Roof

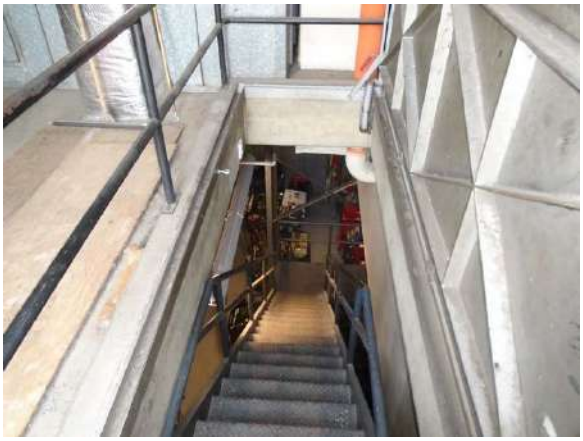
1010004e 8/22/2018
Exhaust fan
Penthouse

1010005a 8/22/2018
Penthouse roof access and roof-mounted equipment
Roof

1010005e 8/22/2018
HVAC piping
Penthouse

1010006a 8/22/2018
Penthouse access from the floor below
Penthouse

1010006e 8/22/2018
Motor control center
Penthouse



1010007a 8/22/2018

Access door and stair to the penthouse

Penthouse

1010007e 8/22/2018

HVAC piping

Penthouse

1010008a 8/22/2018

Automotive shop space

Second floor

1010008e 8/22/2018

Condensing units

Roof

1010009a 8/22/2018

Automotive shop space

Second floor

1010009e 8/22/2018

Exhaust fans

Roof

1010010a 8/22/2018

Automotive shop space

Second floor

1010010e 8/22/2018

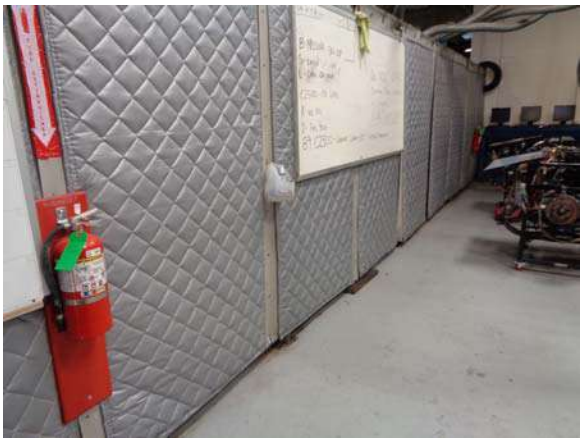
Package HVAC unit

Roof

1010011a 8/22/2018

Gang lavatory

Room 214



1010011e 8/22/2018

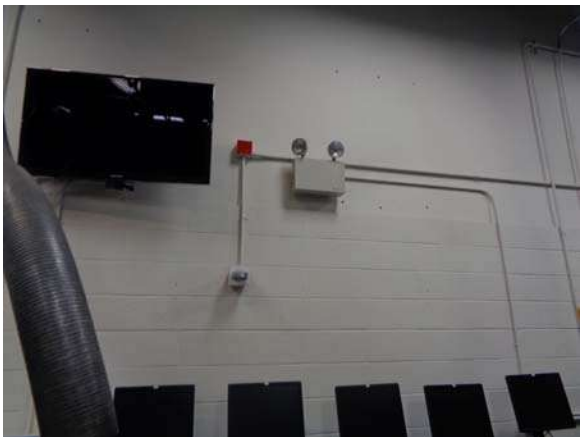
Fire extinguisher

Second floor, 209A

1010012a 8/22/2018

Typical classroom finishes

Second floor



1010012e 8/22/2018

Emergency light and strobe

Second floor, 209A

1010013a 8/22/2018

Exit door, hardware, and exit sign

Room 201

1010013e 8/22/2018

Emergency light and exit sign

Second floor, room 201

1010014a 8/22/2018

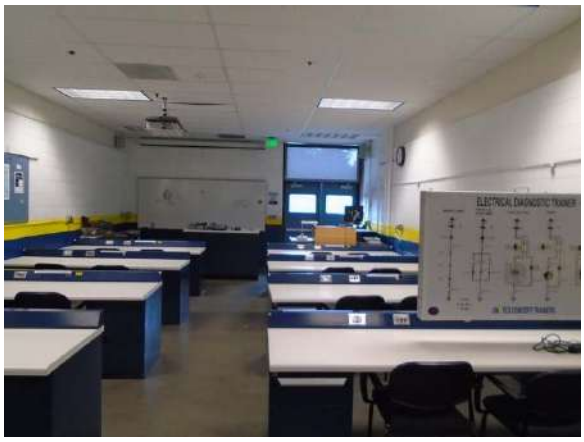
Classroom door and hardware

Room 214

1010014e 8/22/2018

Interior lighting

Second floor, room 202



1010015a 8/22/2018

Automotive teaching lab

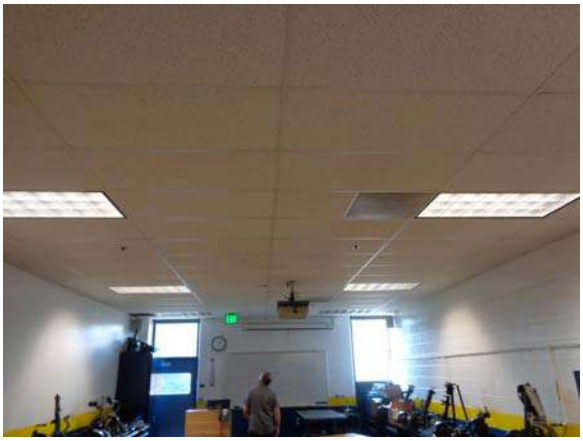
Room 202

1010015e 8/22/2018

Panelboards

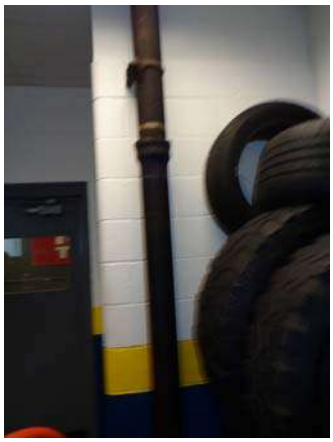
Second floor, room 202

1010016a 8/22/2018
Shop area finishes and entrance/exit doors
Room 214



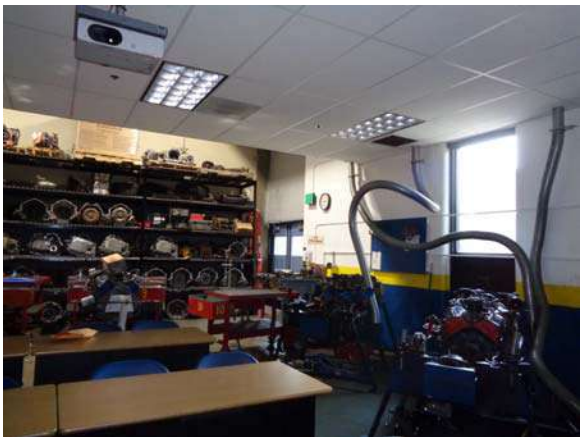
1010016e 8/22/2018
Interior lighting
Second floor, room 203

1010017a 8/22/2018
Automotive shop space
Room 207



1010017e 8/22/2018
Drain piping
Second floor, room 203

1010018a 8/22/2018
Office area exit door and hardware
Room 206



1010018e 8/22/2018
Interior lighting
Second floor, room 205

1010019a 8/22/2018

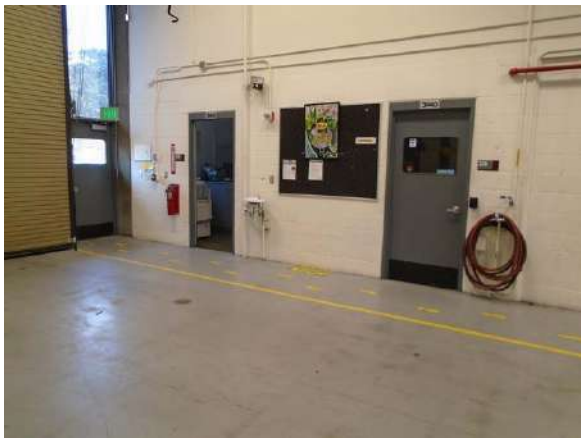
Overhead door

Room 206

1010019e 8/22/2018

Eyewash station

Second floor, room 209



1010020a 8/22/2018

Interior finishes and eyewash without side protection

Room 206

1010020e 8/22/2018

Interior lighting

Second floor, room 206

1010021a 8/22/2018

Nonaccessible service window

Room 216

1010021e 8/22/2018

Window AC unit

Second floor, room 206

1010022a 8/22/2018
Nonaccessible Dutch door service counter
Room 214

1010022e 8/22/2018
Window AC unit
Second floor, room 206

1010023a 8/22/2018
Nonaccessible drinking fountain
Room 207

1010023e 8/22/2018
Interior lighting
Second floor, room 208

1010024a 8/22/2018
Lavatories and area finishes
Room 130

1010024e 8/22/2018
Interior lighting
Second floor, room 210

1010025a 8/22/2018

Urinals and area finishes

First floor, men's restroom

1010025e 8/22/2018

Sprinkler piping

Second floor, room 216

1010026a 8/22/2018

Lavatories and area finishes

First floor, women's restroom

1010026e 8/22/2018

Interior lighting

Second floor, room 209

1010027a 8/22/2018

Water closet and partitions

First floor, women's restroom

1010027e 8/22/2018

Interior lighting

First floor, room 126

1010028a 8/22/2018

Utility sink

First floor

1010028e 8/22/2018

Drain piping

First floor, men's restroom

1010029a 8/22/2018

Lavatory and water closet

First floor, all-gender restroom

1010029e 8/22/2018

Piping

First floor, men's restroom

1010030a 8/22/2018

Nonaccessible service counter

Room 110

1010030e 8/22/2018

Strobe

First floor, room 113

1010031a 8/22/2018

Nonaccessible drinking fountain

Room 113

1010031e 8/22/2018

Air compressor

First floor, room 121A

1010032a 8/22/2018

Classroom finishes

Room 112

1010032e 8/22/2018

Interior lighting

First floor, room 120

1010033a 8/22/2018

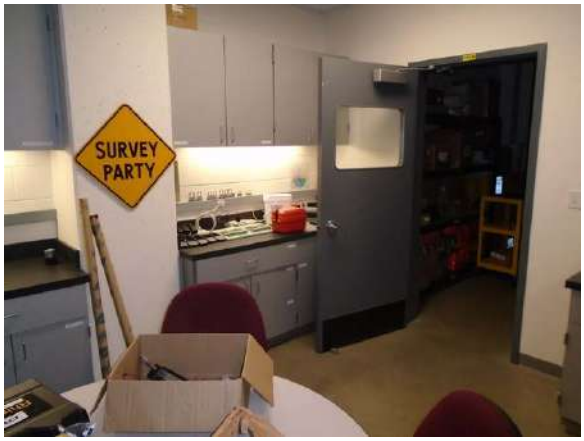
Overhead door and service counter

Suite 103

1010033e 8/22/2018

Panelboards and transformers

First floor, room 120



1010034a 8/22/2018

Casework and area finishes

Suite 103

1010034e 8/22/2018

Interior lighting

First floor, room 119

1010035a 8/22/2018

Overhead door and service counter

Suite 103

1010035e 8/22/2018

Water heater

First floor, room 109

1010036a 8/22/2018

Casework and sink

Suite 103

1010036e 8/22/2018

Evaporator

First floor, room IDF

1010037a 8/22/2018
All-gender restroom lavatory and urinal
Suite 103

1010037e 8/22/2018
Fan coil unit
First floor, room 101

1010038a 8/22/2018
All-gender accessible water closet and accessories
Suite 103

1010038e 8/22/2018
Fire alarm panel
First floor, room 115

1010039a 8/22/2018
Engineering lab casework and finishes
Suite 103

1010039e 8/22/2018
Panelboards
First floor, room 115

1010040a 8/22/2018
Engineering lab casework and finishes
Suite 103

1010040e 8/22/2018
Interior lighting
First floor, room 112

1010041a 8/22/2018
Engineering lab casework, sink, and finishes
Suite 103

1010041e 8/22/2018
Interior lighting
First floor, room 107

1010042a 8/22/2018
Stair without required handrails on both sides
Suite 103

1010042e 8/22/2018
Interior lighting
First floor, room 103

1010043a 8/22/2018
Fenced utility area
South elevation

1010043e 8/22/2018
Fan coil unit
First floor, room 103

1010044a 8/22/2018
Exterior finishes and site conditions
South elevation

1010044e 8/22/2018
Fume hood
First floor, room 103E

1010045a 8/22/2018
Exterior finishes and site conditions
South elevation

1010045e 8/22/2018
Eyewash station
First floor, room 103E

1010046a 8/22/2018
Overhead coiling steel door
South elevation

1010046e 8/22/2018
Emergency shower
First floor, room 103E

1010047a 8/22/2018
Typical glazing system and personnel door
South elevation

1010047e 8/22/2018
Drain piping
First floor, room 103C

1010048a 8/22/2018
Stair with noncompliant handrails
West elevation

1010048e 8/22/2018
Fan coil unit
First floor, room 103C

1010049a 8/22/2018
Ground floor walkway, building finishes, and site conditions
West elevation

1010049e 8/22/2018
Exterior lighting
South elevation

1010050a 8/22/2018
Chain link fence at second level stair
West elevation

1010050e 8/22/2018
Exterior lighting
South elevation

1010051a 8/22/2018
Typical classroom entrance doors
West elevation

1010051e 8/22/2018
Condensing units
Site

1010052a 8/22/2018
Second level walkway and exterior finishes
West elevation

1010052e 8/22/2018
Exterior lighting
East elevation

1010053a 8/22/2018
Detail at the glazing system
West elevation

1010053e 8/22/2018
Exterior lighting
North elevation

1010054a 8/22/2018
Typical detail at the roof overhang
North elevation

1010054e 8/22/2018
Exterior lighting
North elevation

1010055a 8/22/2018
Second floor office entrance door
North elevation

1010055e 8/22/2018
Exterior lighting
Stairwell

1010056a 8/22/2018
Exterior finishes and plaza connection to the Science Technology Building
North elevation

1010056e 8/22/2018
Exterior lighting
West elevation

1010057a 8/22/2018
Automotive bay area entrance doors
North elevation

1010057e 8/22/2018
Exterior lighting
South elevation

1010058a 8/22/2018
Automotive bay area glazing systems
North elevation

1010059a 8/22/2018
Exterior finishes and site conditions
East elevation

1010060a 8/22/2018
Exterior finishes and site conditions
East elevation

1010061a 8/22/2018
Noncompliant guardrails
East elevation

1010062a 8/22/2018
Stair with noncompliant guardrails
East elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1010
Asset Name	Automotive Metals
Year Built or Last Energy Renovation	1968

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

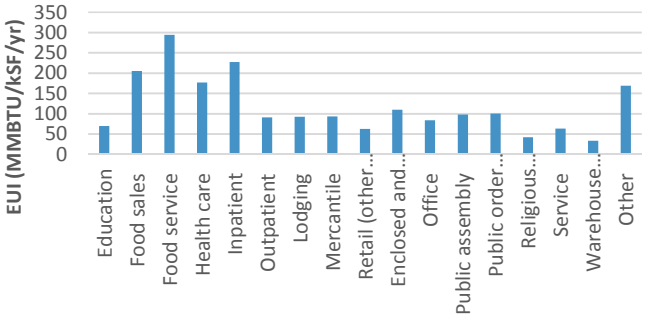
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Shops/Trades, Dry Lab
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**63.4**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 44.4
Energy Efficient (consumes 10% to 30% less energy)	44.4 <= EUI <= 57.1
Similar (consumes within 10% less or 10% more energy)	57.1 < EUI < 69.7
Energy Inefficient (consumes 10% to 30% more energy)	69.7 <= EUI <= 82.4
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 82.4

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

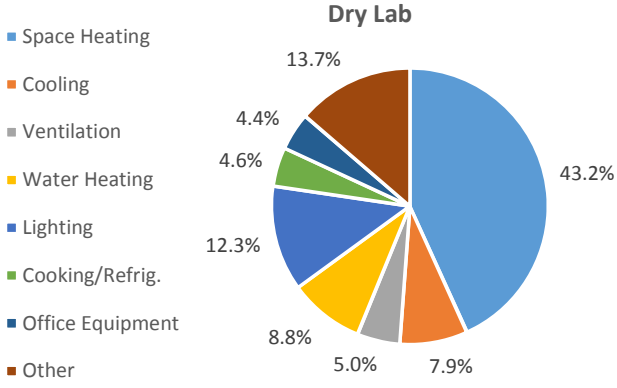


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: SHOPS/TRADES, DRY LAB	
Space Heating	43.2%
Cooling	7.9%
Ventilation	5.0%
Water Heating	8.8%
Lighting	12.3%
Cooking/Refrig.	4.6%
Office Equipment	4.4%
Other	13.7%
Total	99.9%

Figure 2. Energy End Use Profile: Shops/Trades, Dry Lab



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Bookstore
Asset 1020

Inspected August 20, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

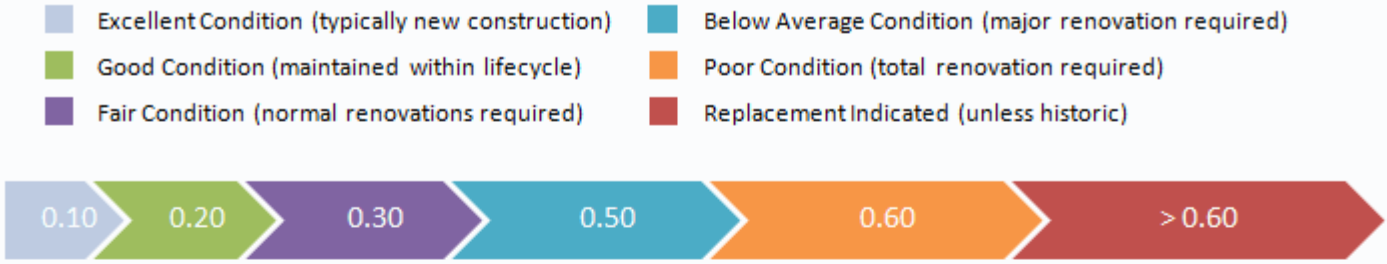
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

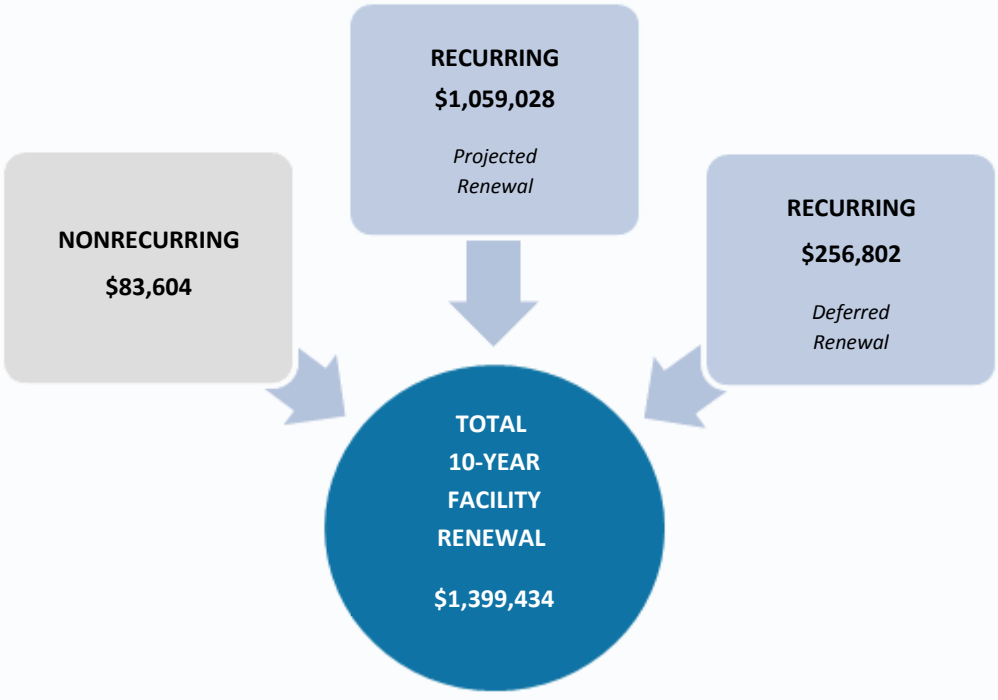
ASSET CODE	1020		
ASSET NAME	BOOKSTORE	**CURRENT REPLACEMENT VALUE**	$5,986,000
ASSET USE	Retail	**FACILITY CONDITION NEEDS INDEX**	0.23
YEAR BUILT	1994	**FACILITY CONDITION INDEX**	0.04
GSF	26,000	**10-YEAR $/SF**	53.82
INSPECTION DATE	08/20/2018		

FCNI Scale

The FCNI for this asset is **0.23**



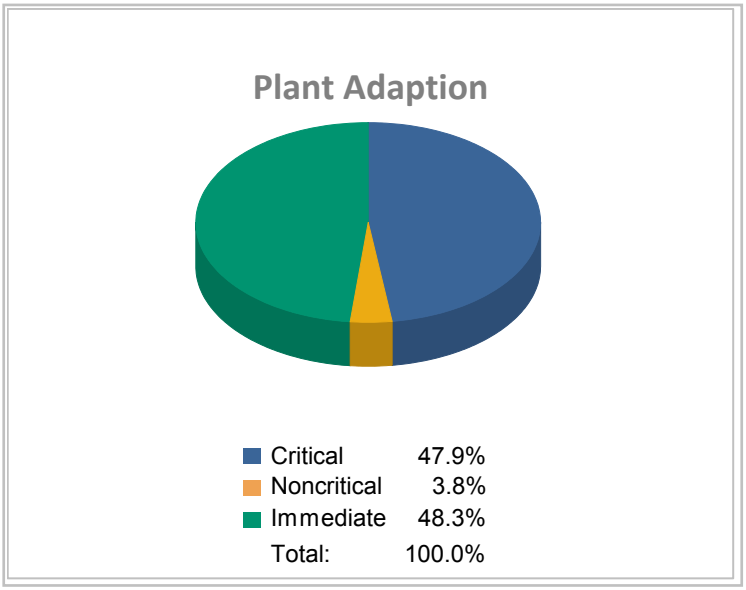
Total Facility Renewal Costs



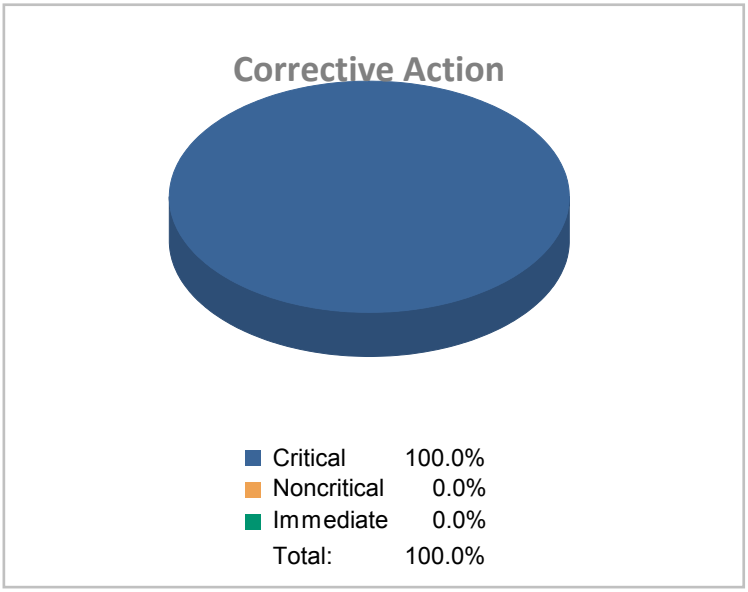
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$36,436**
2 - Critical	**$36,124**
3 - Noncritical	**$2,842**

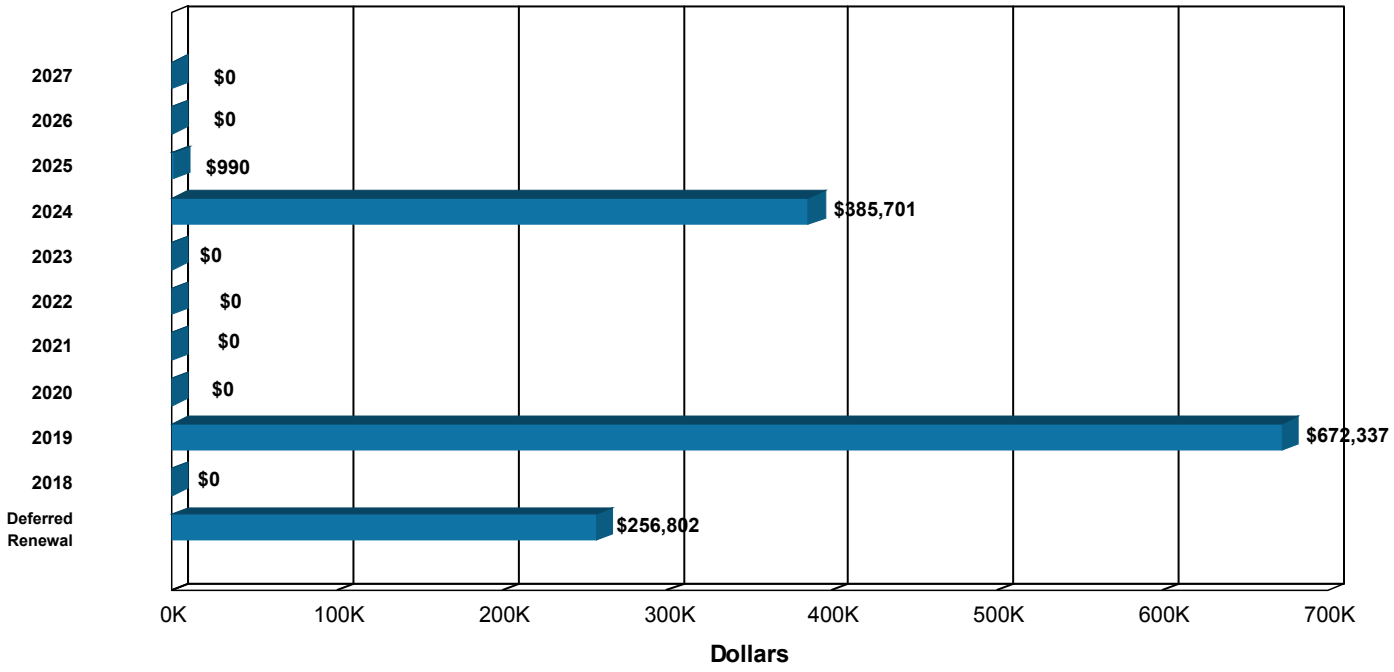


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$8,202**
3 - Noncritical	**$0**

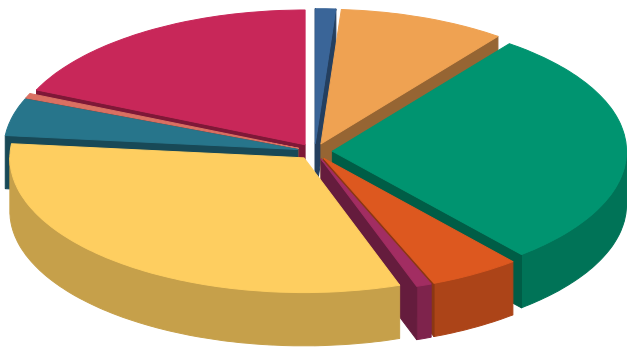


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$14,564	1%
Electrical	$128,450	9%
Exterior	$402,175	29%
Fire/Life Safety	$69,040	5%
Health	$10,127	1%
HVAC	$446,795	32%
Interiors	$65,843	5%
Plumbing	$4,457	0%
Site	$0	0%
Vert. Trans.	$257,984	18%
TOTAL	**$1,399,434**	

ASSET SUMMARY

The bookstore on the Portland Community College, Sylvania campus is a circa 1994, 26,000 gross square foot building with two floors of retail space and a basement storage and utility area. The building has flat roofs and concrete exterior walls. A two-story atrium at the main entrance opens the two retail floors to each other and both of these floors were substantially renovated in 2017.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The building is located just east of the Communications Technology building and on the edge of a slope which gives the basement grade-level access to a service drive shared with the Communications Technology building. Pedestrian access is primarily from a plaza area on the south side at the main entrance. Landscaping is composed of trees, shrubs, ground cover, and a lawn to the north of the building. The site is in good condition and no improvements are recommended at this time.

Exterior Structure

The roofing system is an asphaltic membrane which is ballasted on the upper level with pavers and unballasted on the lower roofs. It is likely that the membranes are original and will reach the end of their lifecycle in the next ten years. The exterior walls are cast concrete and in good condition. However, the joints in the concrete should be inspected in the next ten years for shrinking or cracked sealant, and the sealant replaced where necessary. The overhang above the main entrance on the south of the building is finished with metal panels that are in good condition, but the panel joints should be examined for deteriorating sealants and resealed as necessary.

The windows are insulated glass storefront systems in good condition. The flush hollow-metal doors should last beyond the next ten years, but the storefront doors will reach the end of their normal lifecycle in the next ten years and should be refurbished or replaced. Additionally, the overhead doors should be considered for replacement over the ten years and have their operating parts inspected and replaced where necessary.

Interior Finishes/Systems

The floor finishes include carpet, sheet vinyl, ceramic tile, and polished, sealed concrete. The carpet is new and should last another ten years as should the ceramic tile. The sheet vinyl has exceeded its normal lifecycle and should be replaced. The concrete floors are in generally good condition but should be resealed within the next ten years. There is some cracking evident in the concrete floors on the first floor. Although some of these cracks have been patched, it is recommended that further patching be carried out as a part of building maintenance.

The interior walls are painted or finished with ceramic tile. The wall tile should not require any upgrade at this time, but the painted walls are recommended for repainting within the next ten years. Ceilings are painted hard surfaces or suspended acoustical or metal tile systems, all of which are in good condition with no recommendations. The interior doors and newer casework installations are also in good condition. Older casework in the break room area should be replaced during the next ten years.

Accessibility

The Bookstore is substantially accessible and has grade-level entrances, an elevator, and accessible restrooms as well as lever-handled hardware and compliant room signage. Some barriers to full accessibility remain, such as the absence of required signage on a few doors. All of the noncompliant signage be upgraded to conform to appropriate accessibility standards. Other barriers include the elevator control panel which is only partially compliant with current ADA legislation. It is recommended that a compliant, hands-free phone be installed, or the door over the existing phone be removed in order meet the current standards. Current life safety codes require that handrails continue 12 inches beyond the top riser and bottom tread for safety and accessibility. The stair at the loading dock lacks the required handrail extensions and should be added.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

Exit doors and exit pathways are generally clear of obstruction and well marked with illuminated exit signs. However, the basement should have exit signs added to provide adequate direction from areas where the exits or exit signs are not visible. Emergency lighting is provided by twin-beam fixtures with internal batteries as a source of back-up power. Additionally, some light fixtures may be tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility such as custodial and electrical rooms. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

This facility has a modern Silent Knight fire alarm system with the main addressable fire alarm panel in room E1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been upgraded in 2015. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility is on the campus hot water loop. Two pumps circulate the hot water as the heating medium and an expansion tank supports the system. The pumps and expansion tank are believed to be original and will reach lifecycle depletion toward the end of the next ten years and may need to be replaced on a low priority basis.

The facility contains a Trane rooftop package unit installed in 1994. The package unit is charged with R-22 DX refrigerant for cooling and utilizes the hot water for heating. Distribution equipment consists of metal ductwork equipped with reheat coils and hot water unit heaters. Controls are a digital application. The HAVC equipment is believed to be original. While the distribution equipment has remaining service life, the rooftop package unit and controls should be scheduled for replacement. Additional cooling is provided by a Mitsubishi split system. The circa 2015 unit is well maintained and has substantial remaining service life.

Facility exhaust is provided by rooftop centrifugal fans that serve restrooms and general exhaust needs. The fans are in average condition and two of the units are believed to be original. These fans will reach the end of their service life in the near future. The third unit is believed to have been replaced in 2007 and should outlast the scope of this report.

Electrical

Power is supplied to the facility at 480/277 volts via underground utilities from a transformer on the site. The transformer is believed to be owned by the local utility. An 800 amp main switchboard on the lower level receives the power which is distributed directly or stepped down to 120/208 volts for distribution through a secondary 600 amp switchboard. The main electrical equipment is original and appears to be in adequate condition with no recommendations.

The electrical distribution system consists of panelboards throughout that distribute power at 120/208 or 480/277 volts. Circuits are energized from the panelboards for mechanical, lighting, and general purpose loads. The system appears well marked and properly encased. The distribution system has substantial remaining service life with no recommendations.

The interior lighting consists of surface-mount, suspended, and lay-in fixtures with acrylic and mesh screen lenses and lamped with T8 fluorescent or LED bulbs. Additional lighting is proved by recessed

can-type fixtures lamped with compact fluorescent bulbs. The interior lighting appears to be in good condition and is believed to have been installed at different times. All of the newer lighting outlast the scope of this report, while the remaining original fixtures have reached the end of their service life.

The exterior lighting consists of wall-mounted HID and recessed eave-mounted fixtures at entryways. Additionally, there are pole-mounted fixtures on the site and lighting from adjacent facilities. Although the inspection was performed during daylight, the fixtures appear to provide adequate coverage. While the exterior lighting is in adequate condition, replacement for some of the fixtures may need to be considered based on age.

Emergency power is provided by a district source. An automatic transfer switch (ATS) provides the power for distribution. The General Electric unit was installed in 2015 and appears to be in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the rooftop package unit. They were installed at different times and the circa 1994 unit should be considered for replacement.

Plumbing

Domestic water is supplied through a copper piping network and drain piping is cast-iron with no hub connections and some plastic applications. The piping systems, where they could be viewed, are in adequate condition and have remaining service life beyond the scope of this report.

Domestic hot water is produced by a commercial-grade, electric water heater that has a tank capacity of 80 gallons. A small pump assists in circulation and a small expansion tank supports the equipment. Additionally, the first floor break room sink has an instantaneous water heater. The domestic hot water equipment is well maintained. Due to a short lifecycle, replacement of the instantaneous unit should be anticipated within the scope of this report.

The plumbing fixtures consists of drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. The drinking fountain and kitchen sink are at or beyond their normal lifecycles and recommended for replacement within the next few years. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The facility has a Dover hydraulic passenger elevator installed in 1994. The unit serves three floors and has a rated car capacity of 4,500 pounds. The system is monitored and operated by solid state controls. The elevator appears to be well maintained and was operating properly on the day of inspection. However, based on industry standards the elevator system is nearing the end of its service life and should be modernized. Additionally, there is an original dock leveler at the loading dock. Based on age and condition, the dock leveler has reached the end of its service life.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

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Date of Inspection

August 20, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	8,759	2,963	2,842	0	0	0	0	0	0	0	0	0	0	0	$14,564
EXTERIOR	0	0	0	16,491	0	38,744	0	0	0	0	346,939	0	0	0	$402,175
INTERIOR	0	0	0	38,921	0	0	0	0	0	0	26,922	0	0	0	$65,843
PLUMBING	0	0	0	773	0	2,694	0	0	0	0	0	990	0	0	$4,457
HVAC	0	0	0	62,040	0	372,915	0	0	0	0	11,839	0	0	0	$446,795
FIRE/LIFE SAFETY	27,677	41,363	0	0	0	0	0	0	0	0	0	0	0	0	$69,040
ELECTRICAL	0	0	0	128,450	0	0	0	0	0	0	0	0	0	0	$128,450
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	257,984	0	0	0	0	0	0	0	0	$257,984
HEALTH/EQUIP.	0	0	0	10,127	0	0	0	0	0	0	0	0	0	0	$10,127
SUBTOTAL	$36,436	$44,326	$2,842	$256,802	$0	$672,337	$0	$0	$0	$0	$385,701	$990	$0	$0	$1,399,434
TOTAL NONRECURRING PROJECT NEEDS			$83,604	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,315,830	

CURRENT REPLACEMENT VALUE	$5,986,000
FACILITY CONDITION NEEDS INDEX	0.23
FACILITY CONDITION INDEX	0.04

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
26,000	$1,399,434	$53.82

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$14,564	$0	$14,564
EXTERIOR	$0	$402,175	$402,175
INTERIOR	$0	$65,843	$65,843
PLUMBING	$0	$4,457	$4,457
HVAC	$0	$446,795	$446,795
FIRE/LIFE SAFETY	$69,040	$0	$69,040
ELECTRICAL	$0	$128,450	$128,450
SITE	$0	$0	$0
VERT. TRANS	$0	$257,984	$257,984
HEALTH	$0	$10,127	$10,127
TOTALS	**$83,604**	**$1,315,830**	**$1,399,434**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1020AC03	LOADING DOCK HANDRAIL UPGRADE	C2010	1	Plant Adaption	8,759
1020FS02	FIRE RATING COMPROMISE	D4040	1	Plant Adaption	27,677
1020FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	33,161
1020AC01	ELEVATOR CAB ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,963
1020FS03	IMPROVE EGRESS PATHWAY DESIGNATION	D4030	2	Corrective Action	8,202
1020AC02	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	1,215
1020AC04	COPY: INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	1,627
				TOTAL	**$83,604**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1020	DR28	DOOR OPERATOR, POWER-ASSIST			ENTRANCE	B2030	Deferred Renewal	6,770
1020	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			BALCONY	B2030	Deferred Renewal	946
1020	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			BASEMENT	B2030	Deferred Renewal	2,839
1020	DR36	DOOR PANIC HARDWARE, EXTERIOR			STAIRWELL EXIT	B2030	Deferred Renewal	1,187
1020	DR36	DOOR PANIC HARDWARE, EXTERIOR			ENTRANCE	B2030	Deferred Renewal	4,748
1020	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	Deferred Renewal	902
1020	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE			C3020	Deferred Renewal	38,019
1020	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	773
1020	BA18	HVAC CONTROLS - TERMINAL ASSEMBLIES - RETAIL				D3060	Deferred Renewal	43,275
1020	BA41	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - RETAIL				D3060	Deferred Renewal	12,638
1020	BA64	HVAC CONTROLS - MAJOR INSTRUMENTATION - RETAIL				D3060	Deferred Renewal	6,126
1020	VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	SUPPLY FAN	0000000251	ROOF	D5010	Deferred Renewal	10,846
1020	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED, EAVE-MOUNT			D5020	Deferred Renewal	2,034
1020	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	Deferred Renewal	3,858
1020	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	Deferred Renewal	2,503
1020	LI18	LIGHTING SYSTEM, INTERIOR - RETAIL				D5020	Deferred Renewal	109,209

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1020	DK01	DOCK LEVELER			SITE	E1040	Deferred Renewal	10,127
1020	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION			SOFFIT AT ENTRY	B2010	2019	23,633
1020	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			BALCONY	B2030	2019	3,022
1020	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			ENTRANCE	B2030	2019	12,089
1020	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	DOVER	0000004413	005	D1010	2019	257,984
1020	DF01	DRINKING FOUNTAIN, DUAL-LEVEL				D2010	2019	2,694
1020	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ILG	0000000148	ROOF	D3040	2019	3,773
1020	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ILG	0000000252	ROOF	D3040	2019	3,773
1020	HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	TRANE	0000000599	ROOF	D3050	2019	365,370
1020	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				B2010	2024	49,372
1020	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	2024	29,850
1020	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	2024	10,419
1020	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	2024	25,006
1020	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				B2030	2024	6,284
1020	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	REFLECTIVE COATED			B3010	2024	53,314

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1020	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BALLASTED			B3010	2024	172,696
1020	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RM	C1030	2024	26,922
1020	PH01	PUMP - ELECTRIC (<=10 HP)	HHW	0000000589	008	D3040	2024	5,078
1020	PH01	PUMP - ELECTRIC (<=10 HP)	HHW	0000000590	008	D3040	2024	5,078
1020	TK23	EXPANSION TANK, STL PT (50-450 GAL)	CEILING	0000000591	008	D3040	2024	1,684
1020	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		105	D2020	2025	990
							TOTAL	**$1,315,830**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
3	1020FS03	IMPROVE EGRESS PATHWAY DESIGNATION	2	$8,202
		TOTAL FOR CORRECTIVE ACTION		**$8,202**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1020FS02	FIRE RATING COMPROMISE	1	$27,677
2	1020AC03	LOADING DOCK HANDRAIL UPGRADE	1	$8,759
4	1020FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$33,161
5	1020AC01	ELEVATOR CAB ACCESSIBILITY UPGRADES	2	$2,963
6	1020AC04	COPY: INTERIOR DOOR ACCESSIBILITY UPGRADES	3	$1,627
7	1020AC02	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	3	$1,215
		TOTAL FOR PLANT ADAPTION		**$75,401**
		GRAND TOTAL:		**$83,604**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	1020AC03	1	Plant Adaption	LOADING DOCK HANDRAIL UPGRADE	$8,759
5	1020AC01	2	Plant Adaption	ELEVATOR CAB ACCESSIBILITY UPGRADES	$2,963
6	1020AC04	3	Plant Adaption	COPY: INTERIOR DOOR ACCESSIBILITY UPGRADES	$1,627
7	1020AC02	3	Plant Adaption	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	$1,215
				TOTAL FOR ACCESSIBILITY	**$14,564**
1	1020FS02	1	Plant Adaption	FIRE RATING COMPROMISE	$27,677
3	1020FS03	2	Corrective Action	IMPROVE EGRESS PATHWAY DESIGNATION	$8,202
4	1020FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$33,161
				TOTAL FOR FIRE/LIFE SAFETY	**$69,040**
				GRAND TOTAL:	**$83,604**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

FIRE RATING COMPROMISE

Project Number:	1020FS02	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	12/2/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1,2,B

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed with little regard for fire-rated separations. Additionally, little or no regard has been given to the building's passive and active firestopping systems. Intumescent passive firestopping and moderate structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	60,000	$0.03	$1,800	$0.08	$4,800	$6,600
Moderate passive firestopping and structural separation repairs	SF	60,000	$0.06	$3,600	$0.16	$9,600	$13,200
			Base Material/Labor Costs	**$5,400**		**$14,400**	
			Indexed Material/Labor Costs	**$5,368**		**$14,515**	**$19,883**
					Construction Mark Up at 20.0%		**$3,977**
					Original Construction Cost		**$23,859**
Date of Original Estimate: 12/2/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$23,859**
					Professional Fees at 16.0%		**$3,817**
					TOTAL PROJECT COST		**$27,677**

All costs shown as Present Value

LOADING DOCK HANDRAIL UPGRADE

Project Number:	1020AC03	**Category Code:** AC2A	
Priority Sequence:	2		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	12/3/2018	**Element:**	GENERAL

Code Application:

IBC	1014.6
ADAAG	505

Subclass/Savings:

Not Applicable

Project Location:

Item Only: Floor(s) B

Description

Current life safety codes require that handrails continue 12 inches beyond the top riser and bottom tread for safety and accessibility. The stair at the loading dock lacks the required handrail extensions and should be added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, per elevation change up to 5 feet	SYS	1	$1,750	$1,750	$2,880	$2,880	$4,630
Wall-mounted handrail system, per elevation change up to 5 feet	SYS	1	$970	$970	$680	$680	$1,650
			Base Material/Labor Costs	**$2,720**		**$3,560**	
			Indexed Material/Labor Costs	**$2,704**		**$3,588**	**$6,292**
					Construction Mark Up at 20.0%		**$1,258**
					Original Construction Cost		**$7,551**
Date of Original Estimate: 12/3/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$7,551**
					Professional Fees at 16.0%		**$1,208**
					TOTAL PROJECT COST		**$8,759**

All costs shown as Present Value

IMPROVE EGRESS PATHWAY DESIGNATION

Project Number:	1020FS03	**Category Code:** FS5A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Corrective Action	**Component:**	EGRESS PATH
Date Basis:	8/20/2018	**Element:**	DESIGNATION

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Not Applicable	Floor-wide: Floor(s) B
IBC	1011		

Description

The egress pathways in the basement are not clearly designated by exit signs. It is recommended that new LED-type battery backup exit signs be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new battery pack LED exit signs, including all connections and extension of power	SF	5,000	$0.78	$3,900	$0.40	$2,000	$5,900
Base Material/Labor Costs				**$3,900**		**$2,000**	
Indexed Material/Labor Costs				**$3,877**		**$2,016**	**$5,893**
Construction Mark Up at 20.0%							**$1,179**
Original Construction Cost							**$7,071**
Date of Original Estimate: 8/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,071**
Professional Fees at 16.0%							**$1,131**
TOTAL PROJECT COST							**$8,202**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1020FS01	**Category Code:** FS6A	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/30/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	30	$304	$9,120	$488	$14,640	$23,760
Base Material/Labor Costs				**$9,120**		**$14,640**	
Indexed Material/Labor Costs				**$9,065**		**$14,757**	**$23,822**
Construction Mark Up at 20.0%							**$4,764**
Original Construction Cost							**$28,587**
Date of Original Estimate: 10/30/2018						**Inflation**	**$0**
Current Year Construction Cost							**$28,587**
Professional Fees at 16.0%							**$4,574**
TOTAL PROJECT COST							**$33,161**

All costs shown as Present Value

ELEVATOR CAB ACCESSIBILITY UPGRADES

Project Number:	1020AC01	**Category Code:** AC3A	
Priority Sequence:	5		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/11/2018	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	407	Not Applicable	Item Only: Floor(s) 1

Description

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. The elevator is partially compliant with current ADA legislation. It is recommended that a compliant hands-free phone be installed or that the door over the existing phone be removed in order meet the current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, hands-free elevator emergency telephone	EA	1	$1,227	$1,227	$902	$902	$2,129
			Base Material/Labor Costs	**$1,227**		**$902**	
			Indexed Material/Labor Costs	**$1,219**		**$909**	**$2,129**
					Construction Mark Up at 20.0%		**$426**
					Original Construction Cost		**$2,554**
Date of Original Estimate:	10/11/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$2,554**
					Professional Fees at 16.0%		**$409**
					TOTAL PROJECT COST		**$2,963**

All costs shown as Present Value

COPY: INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	1020AC04	**Category Code:** AC3C	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/4/2018	**Element:**	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4, 703.1	Not Applicable	Floor-wide

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs. In addition, the signage is not ADA compliant. It is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. Compliant signage should meet specific size, graphical, Braille, height, and location requirements.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	1	$67.64	$68	$19.89	$20	$88
ADA-compliant commercial-grade door hardware	EA	2	$387	$774	$155	$310	$1,084
			Base Material/Labor Costs	**$841**		**$330**	
			Indexed Material/Labor Costs	**$836**		**$333**	**$1,169**
					Construction Mark Up at 20.0%		**$234**
					Original Construction Cost		**$1,403**
Date of Original Estimate: 12/4/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$1,403**
					Professional Fees at 16.0%		**$224**
					TOTAL PROJECT COST		**$1,627**

All costs shown as Present Value

INTERIOR SIGNAGE ACCESSIBILITY UPGRADES

Project Number:	1020AC02	**Category Code:** AC3D	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/11/2018	**Element:**	SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	703.1	Not Applicable	Floor-wide: Floor(s) 1,2,B

Description

Current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. This scope includes directional signage.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	10	$67.64	$676	$19.89	$199	$875
Base Material/Labor Costs				**$676**		**$199**	
Indexed Material/Labor Costs				**$672**		**$200**	**$873**
Construction Mark Up at 20.0%							**$175**
Original Construction Cost							**$1,047**
Date of Original Estimate: 10/11/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,047**
Professional Fees at 16.0%							**$168**
TOTAL PROJECT COST							**$1,215**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				3,240	SF	$49,372	1994	30		2024
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION			SOFFIT AT ENTRY	1,000	SF	$23,633	1994	25		2019
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				12,960	SF	$29,850	1994	30		2024
WN05	GLASS, STOREFRONT				1,800	SF	$254,134	1994	40		2034
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			ENTRANCE	4	LEAF	$12,089	1994	25		2019
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			BALCONY	1	LEAF	$3,022	1994	25		2019
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			STAIRWELL EXIT	1	LEAF	$2,007	1994	40		2034
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			BASEMENT	3	LEAF	$6,020	1994	40		2034
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				240	SF	$25,006	1994	30		2024
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				100	SF	$10,419	1994	30		2024
DR28	DOOR OPERATOR, POWER-ASSIST			ENTRANCE	1	EA	$6,770	1994	20	3	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				3	EA	$6,284	1994	30		2024
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			BASEMENT	3	EA	$2,839	1994	12	11	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			BALCONY	1	EA	$946	1994	12	11	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR			ENTRANCE	4	EA	$4,748	1994	12	11	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR36	DOOR PANIC HARDWARE, EXTERIOR			STAIRWELL EXIT	1	EA	$1,187	1994	12	11	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BALLASTED			8,260	SF	$172,696	1994	30		2024
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	REFLECTIVE COATED			2,550	SF	$53,314	1994	30		2024
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				20	LEAF	$44,229	1994	60		2054
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				4	LEAF	$14,674	1994	60		2054
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				24	EA	$18,070	1994	35		2029
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RM	48	LF	$26,922	1994	30		2024
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			CHECKOUT	45	LF	$38,711	2017	40		2057
IW01	WALL FINISH - APPLIED, STANDARD				19,450	SF	$54,285	2017	12		2029
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,020	SF	$41,312	1994	60		2054
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				7,900	SF	$94,115	2017	12		2029
IF04	FLOORING - VINYL SHEET, STANDARD				80	SF	$902	1994	15	8	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			RESTROOMS	990	SF	$34,914	1994	40		2034
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE			10,870	SF	$38,019	1994	10	13	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				7,110	SF	$79,136	2017	45		2062
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	PERFORATED METAL			4,740	SF	$64,025	2017	45		2062

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				7,900	SF	$22,049	2017	24		2041
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	DOVER	0000004413	005	1	EA	$257,984	1994	25		2019
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	$2,694	1994	25		2019
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				4	EA	$5,405	1994	35		2029
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	$773	1994	20	3	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	$3,329	1994	50		2044
FX10	PLUMBING FIXTURE - URINAL				2	EA	$2,157	1994	35		2029
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				4	EA	$6,780	1994	35		2029
PS18	SUPPLY PIPING SYSTEM - RETAIL				26,000	SF	$92,326	1994	50		2044
TK07	EXPANSION TANK, STL PT (20-26 GAL)	WATTS	0000000592	008	20	GAL	$1,370	2013	30		2043
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	A.O. SMITH	0000009385	008	80	GAL	$12,774	2013	30		2043
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		105	1	EA	$990	2015	10		2025
PD18	DRAIN PIPING SYSTEM - RETAIL				26,000	SF	$138,453	1994	60		2054
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI		PATIO	1	TON	$1,946	2015	25		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBUISHI	0000006814	BDF	1	TON	$2,495	2015	30		2045
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ILG	0000000148	ROOF	1	EA	$3,773	1994	25		2019

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ILG	0000000252	ROOF	1	EA	$3,773	1994	25		2019
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	COOLAIR	0000009387	ROOF	1	EA	$6,899	2007	25		2032
HV18	HVAC DISTRIBUTION NETWORKS - RETAIL				26,000	SF	$445,773	1994	45		2039
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009383	008	1	HP	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HHW	0000000589	008	3	HP	$5,078	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	HHW	0000000590	008	3	HP	$5,078	1994	30		2024
TK23	EXPANSION TANK, STL PT (50-450 GAL)	CEILING	0000000591	008	50	GAL	$1,684	1994	30		2024
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	TRANE	0000000599	ROOF	55	TON	$365,370	1994	25		2019
BA18	HVAC CONTROLS - TERMINAL ASSEMBLIES - RETAIL				26,000	SF	$43,275	1994	20	3	DR
BA41	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - RETAIL				26,000	SF	$12,638	1994	10	13	DR
BA64	HVAC CONTROLS - MAJOR INSTRUMENTATION - RETAIL				26,000	SF	$6,126	1994	10	13	DR
FS01	FIRE SPRINKLER SYSTEM - WET				26,000	SF	$351,745	1994	80		2074
FA01	FIRE ALARM SYSTEM - DEVICES		0010824671	007	26,000	SF	$111,749	2015	18		2033
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	0010824671	007	1	EA	$2,254	2015	18		2033
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		007	1	EA	$13,857	2015	18		2033
SE18	ELECTRICAL DISTRIBUTION NETWORK - RETAIL				26,000	SF	$312,894	1994	50		2044

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SDP2	0000000582	009	600	AMP	$47,259	1994	40		2034
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	MDP	0000000580	009	800	AMP	$58,271	1994	40		2034
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RETURN FAN	0000000597	ROOF	15	HP	$6,433	2017	16		2033
VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	SUPPLY FAN	0000000251	ROOF	30	HP	$10,846	1994	17	6	DR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED, EAVE-MOUNT			4	EA	$2,034	1994	20	3	DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			5	EA	$3,858	1994	20	3	DR
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	2	EA	$1,948	1994	40		2034
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	2	EA	$2,503	1994	20	3	DR
LI18	LIGHTING SYSTEM, INTERIOR - RETAIL				16,000	SF	$109,209	1994	20	3	DR
LI18	LIGHTING SYSTEM, INTERIOR - RETAIL				10,000	SF	$68,256	2017	20		2037
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				10,000	SF	$22,966	2017	20		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ZENITH	0000000595	E0-1	100	AMP	$5,527	2015	25		2040
DK01	DOCK LEVELER			SITE	1	EA	$10,127	1994	20		DR
						Grand Total:	**$3,808,068**				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		3	EA	$2,839	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		1	EA	$946	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		4	EA	$4,748	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		1	EA	$1,187	DR
B2030	DOOR OPERATOR, POWER-ASSIST		1	EA	$6,770	DR
C3020	FLOORING - VINYL SHEET, STANDARD		80	SF	$902	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE	10,870	SF	$38,019	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$773	DR
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - RETAIL		26,000	SF	$43,275	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - RETAIL		26,000	SF	$6,126	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - RETAIL		26,000	SF	$12,638	DR
D5010	VARIABLE FREQUENCY DRIVE (25-30 HP)	SUPPLY FAN	30	HP	$10,846	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED, EAVE-MOUNT	4	EA	$2,034	DR
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	5	EA	$3,858	DR
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		2	EA	$2,503	DR
D5020	LIGHTING SYSTEM, INTERIOR - RETAIL		16,000	SF	$109,209	DR
E1040	DOCK LEVELER		1	EA	$10,127	DR
		TOTAL DEFERRED RENEWAL COST			**$256,802**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1020 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS		4	LEAF	$12,452	2019
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS		1	LEAF	$3,113	2019
B2010	WALL, EXTERIOR, PANEL JOINT RESTORATION		1,000	SF	$24,342	2019
D2010	DRINKING FOUNTAIN, DUAL-LEVEL		1	EA	$2,775	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ILG	1	EA	$3,886	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	ILG	1	EA	$3,886	2019
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	TRANE	55	TON	$376,331	2019
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	DOVER	1	EA	$265,723	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$692,507**	

No Projected Component Replacement Cost for Asset No. 1020 for 2020

No Projected Component Replacement Cost for Asset No. 1020 for 2021

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1020 for 2022

No Projected Component Replacement Cost for Asset No. 1020 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BALLASTED	8,260	SF	$206,208	2024
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	REFLECTIVE COATED	2,550	SF	$63,660	2024
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		48	LF	$32,147	2024
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		240	SF	$29,858	2024
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		100	SF	$12,441	2024
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		3	EA	$7,503	2024
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		12,960	SF	$35,642	2024
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED		3,240	SF	$58,952	2024
D3040	PUMP - ELECTRIC (<=10 HP)	HHW	3	HP	$6,063	2024
D3040	PUMP - ELECTRIC (<=10 HP)	HHW	3	HP	$6,063	2024
D3040	EXPANSION TANK, STL PT (50-450 GAL)	CEILING	50	GAL	$2,010	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$460,547**	

COMPONENT RENEWAL COST BY YEAR

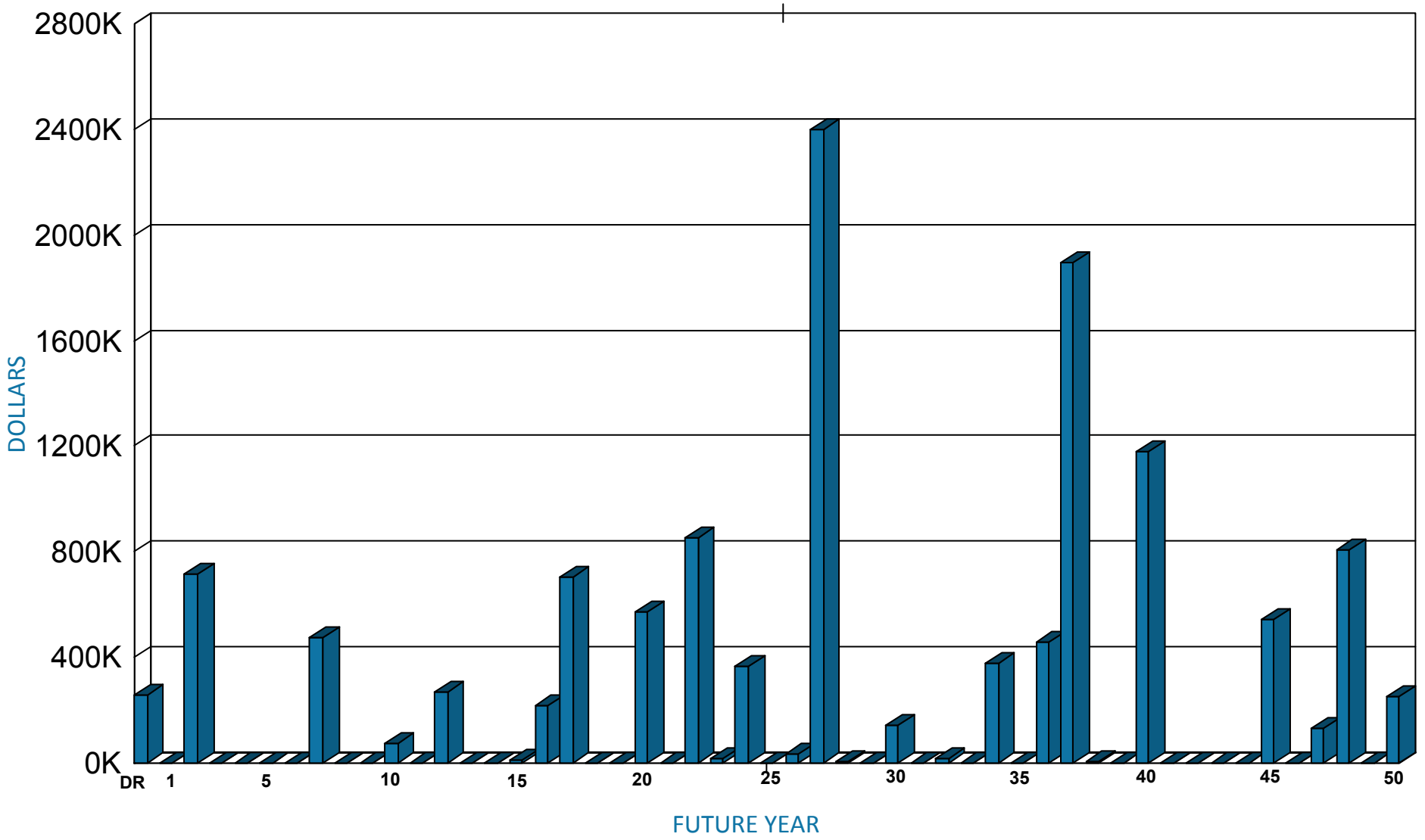
All costs shown as Future Value using a 3% average inflation rate

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,218	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$1,218	

No Projected Component Replacement Cost for Asset No. 1020 for 2026

No Projected Component Replacement Cost for Asset No. 1020 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $4.50

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

FS02

AC02 FS03

BOOKSTORE

BLDG NO. 1020

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/4/2018
Drawn by: A.W.
Project No. 18-064

BASEMENT FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE

FS02

AC02

BOOKSTORE

BLDG NO. 1020

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/4/2018
Drawn by: A.W.
Project No. 18-064

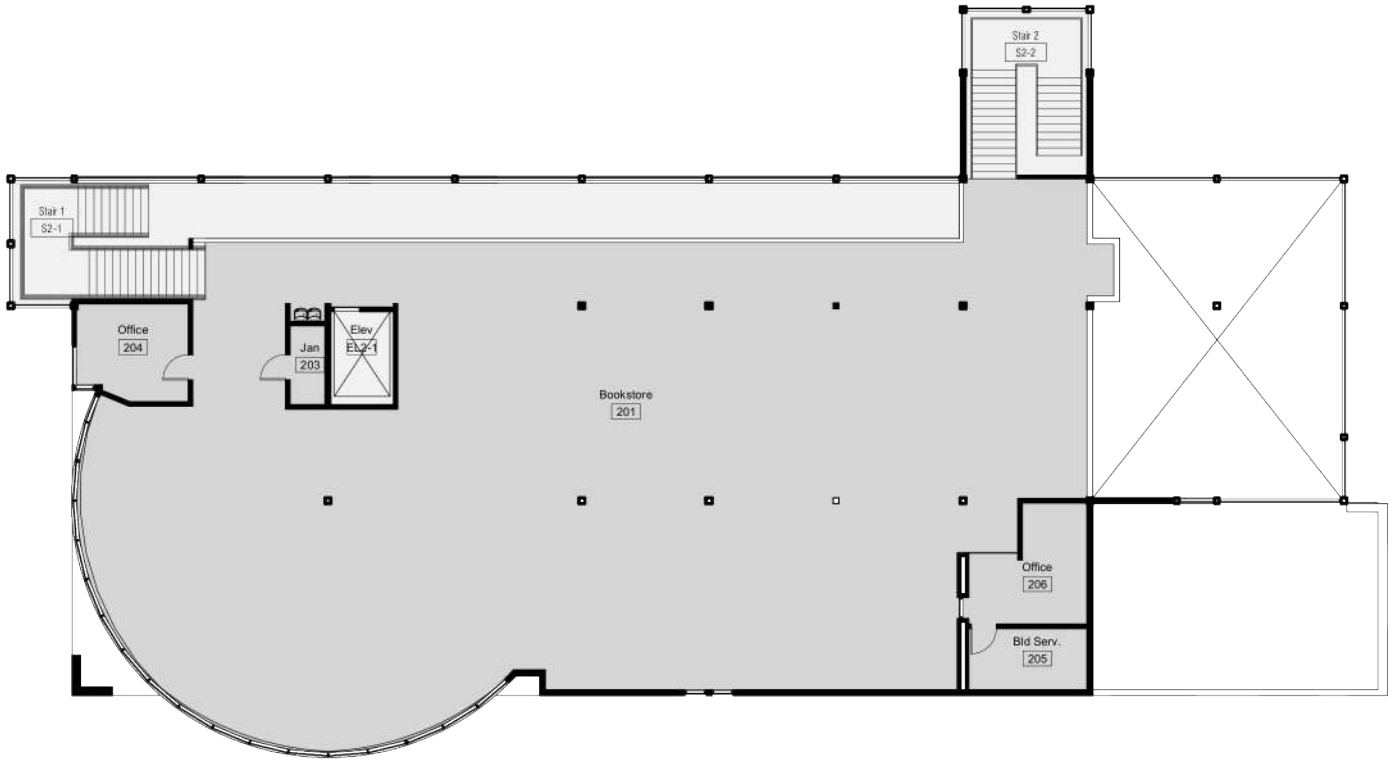
FIRST FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

ROOF

FS01



FS02

AC02

BOOKSTORE

BLDG NO. 1020

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/5/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

1020001a 8/20/2018
Exterior finishes and site at the main entrance
South elevation

1020001e 8/20/2018
Vent and exhaust fan
Roof

1020002a 8/20/2018
Glazing and entrance doors at the main entrance
South elevation

1020002e 8/20/2018
Air-cooled chiller
Roof

1020003a 8/20/2018
Stairwell exterior
East elevation

1020003e 8/20/2018
Air handling unit
Roof

1020004a 8/20/2018
Exterior finishes and site
East elevation

1020004e 8/20/2018
Variable frequency drive
Roof

1020005a 8/20/2018
Exterior finishes and site
East elevation

1020005e 8/20/2018
Exhaust fan
Roof

1020006a 8/20/2018
Exterior finishes and site
North elevation

1020006e 8/20/2018
Panelboards
Second floor, room 205

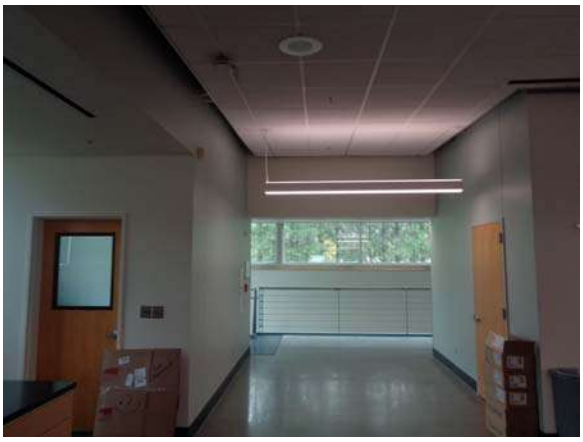
1020007a 8/20/2018
Exterior finishes at the loading dock
West elevation

1020007e 8/20/2018
Interior lighting
Second floor, room 206

1020008a 8/20/2018
Loading dock and exits
West elevation

1020008e 8/20/2018
Interior lighting
Second floor, room 201

1020009a 8/20/2018
Loading dock area
West elevation



1020009e 8/20/2018
Interior lighting
Second floor, room 201

1020010a 8/20/2018

Stair with noncompliant handrails

West elevation

1020010e 8/20/2018

Car operating panel

Elevator cab

1020011a 8/20/2018

Service court between Bookstore and Communications Technology

West elevation

1020011e 8/20/2018

Exit sign and interior lighting

Second floor, room 201

1020012a 8/20/2018

First floor office balcony

West elevation

1020012e 8/20/2018

Panelboard

Second floor, room 203

1020013a 8/20/2018
Roof drain, overflow drain, and roof paver ballast
Roof

1020013e 8/20/2018
Smoke detector, sprinkler head, and interior lighting
Second floor, room 203

1020014a 8/20/2018
Roof and mechanical equipment screen
Roof

1020014e 8/20/2018
Emergency light
First floor, corridor C1-1

1020015a 8/20/2018
Lower roof membrane and parapet without fall protection
Roof

1020015e 8/20/2018
Evaporator
First floor, room BDF

1020016a 8/20/2018

Roof drain and overflow scupper

Roof

1020016e 8/20/2018

Digital thermostat

First floor, room BDF

1020017a 8/20/2018

Detail at the parapet cap and flashing

Upper roof

1020017e 8/20/2018

Condensing unit

First floor, patio

1020018a 8/20/2018

Lower roof membrane and access ladder

Roof

1020018e 8/20/2018

Lavatory and water closet

First floor, room T1-1

1020019a 8/20/2018
Roof edge without fall protection
Roof

1020019e 8/20/2018
Sprinkler head and vent
First floor, room T1-1

1020020a 8/20/2018
Soffit finish and glazing system
Roof

1020020e 8/20/2018
Strobe and interior lighting
First floor, corridor C1-1

1020021a 8/20/2018
Roof access
Roof

1020021e 8/20/2018
Sink
First floor, room 105

1020022a 8/20/2018

Office area carpet

Second floor

1020022e 8/20/2018

Water heater

First floor, room 105

1020023a 8/20/2018

Retail area typical finishes

Second floor

1020023e 8/20/2018

Strobe, sprinkler head, and interior lighting

First floor, room T1-3

1020024a 8/20/2018

Ceiling with signs of possible roof leak

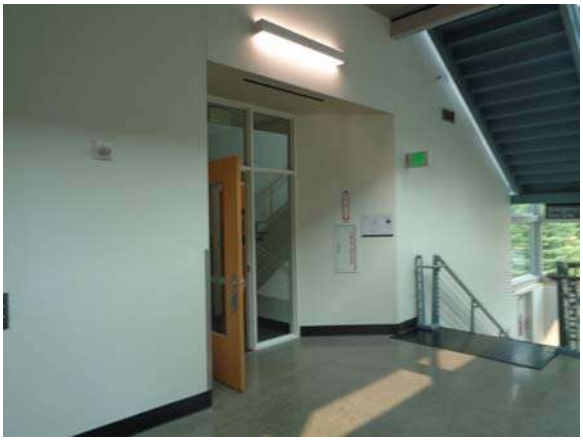
Second floor

1020024e 8/20/2018

GFCI receptacle and lavatory

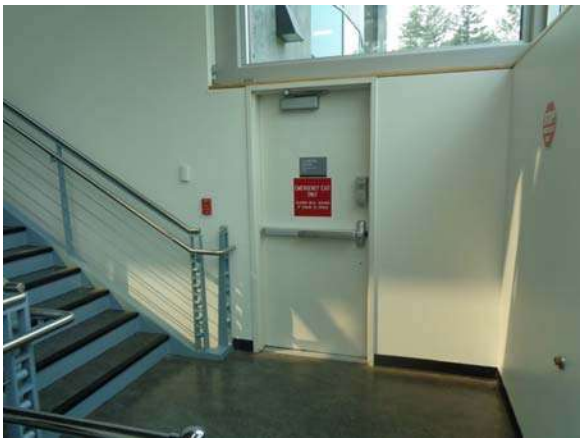
First floor, room T1-3

1020025a 8/20/2018
Guardrail at the atrium lobby space
Second floor



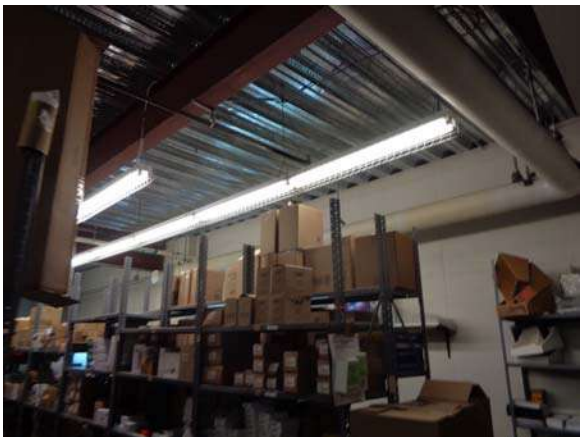
1020025e 8/20/2018
Exit sign and strobe
First floor, room 100

1020026a 8/20/2018
Ceiling and exterior wall finishes at the atrium
Second floor



1020026e 8/20/2018
Pull station
Basement, stairway

1020027a 8/20/2018
Second floor ceiling
Second floor



1020027e 8/20/2018
Interior lighting
Basement, room 002

1020028a 8/20/2018

Elevator with noncompliant door over the emergency phone

Elevator

1020028e 8/20/2018

Exit sign and interior lighting

Basement, room 002

1020029a 8/20/2018

Accessible drinking fountains

Second floor

1020029e 8/20/2018

Unit heater

Basement, room 002

1020030a 8/20/2018

Typical rated door and frame at the utility room

Second floor

1020030e 8/20/2018

Panelboard

Basement, room 002

1020031a 8/20/2018

Utility sink

Second floor

1020031e 8/20/2018

Elevator machine and controller

Basement, room 005

1020032a 8/20/2018

Door with compliant hardware, missing required signage

Second floor

1020032e 8/20/2018

Fire extinguisher

Basement, room 005

1020033a 8/20/2018

Unfirestopped penetrations

Room M1-1

1020033e 8/20/2018

Unit heater

Basement, room 002

1020034a 8/20/2018
Doors without required signage
Corridor C1-1

1020034e 8/20/2018
Sprinkler standpipe and fire extinguisher
Basement, room 002

1020035a 8/20/2018
Casework and area finishes
Room 106

1020035e 8/20/2018
Interior lighting
Basement, room 002

1020036a 8/20/2018
Break room casework
Room 105

1020036e 8/20/2018
Drain piping and HVAC piping
Basement, room 001

1020037a 8/20/2018

Door to the balcony

Room 108

1020037e 8/20/2018

Panelboard

Basement, room 009

1020038a 8/20/2018

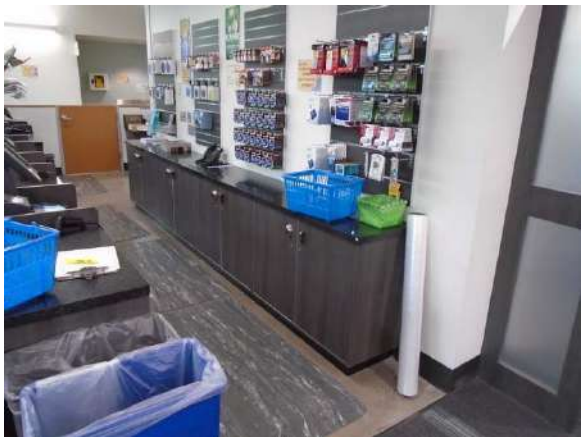
Accessible water closet, lavatory, and accessories

Room T1-1

1020038e 8/20/2018

Transformer

Basement, room 009



1020039a 8/20/2018

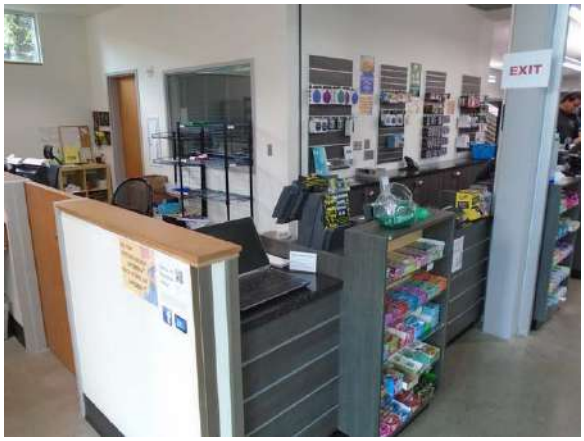
Casework at the point of sale area

Room 100

1020039e 8/20/2018

Switchboard

Basement, room 009



1020040a 8/20/2018

Retail area finishes

Room 100

1020040e 8/20/2018

Panelboards

Basement, room E0-1

1020041a 8/20/2018

Accessible drinking fountains

Corridor C1-3

1020041e 8/20/2018

Automatic transfer switch

Basement, room 007

1020042a 8/20/2018

Lavatories and area finishes

Room T1-4

1020042e 8/20/2018

Fire alarm panel

Basement, room 007

1020043a 8/20/2018
Toilet partitions and finishes
Room T1-4

1020043e 8/20/2018
Safepath panel
Basement, room 007

1020044a 8/20/2018
Accessible water closet and accessories
Room T1-4

1020044e 8/20/2018
Water heater and electrical disconnects
Basement, room 008

1020045a 8/20/2018
Urinals, screens, and finishes
Room T1-3

1020045e 8/20/2018
Pump equipment
Basement, room 008

1020046a 8/20/2018

Retail area typical finishes

Room 100

1020046e 8/20/2018

HVAC piping and expansion tank

Basement, room 008

1020047a 8/20/2018

Retail area typical finishes

Room 100

1020047e 8/20/2018

Pump equipment

Basement, room 008

1020048a 8/20/2018

Stair with compliant railings

Stair 2

1020048e 8/20/2018

Switchboard

East elevation

1020049a 8/20/2018

Basement access stair

Stair 1

1020049e 8/20/2018

Exterior lighting

Site

1020050a 8/20/2018

Compliant guardrails and handrails

Stair 1

1020050e 8/20/2018

Transformer

Site

1020051a 8/20/2018

Exit door and hardware

Stair 1

1020051e 8/20/2018

Panelboard and electrical disconnect switch

East elevation

1020052a 8/20/2018

Basement typical finish

Room 002

1020052e 8/20/2018

Exterior finishes

East elevation

1020053a 8/20/2018

Exit door, hardware, and signage

Room 002

1020053e 8/20/2018

Exterior lighting

North elevation

1020054a 8/20/2018

Loading dock overhead door, exit door, and signage

Room 002

1020054e 8/20/2018

Exterior lighting

Loading dock

1020055a 8/20/2018

Loading dock leveler

Loading dock

1020055e 8/20/2018

Exterior lighting

Loading dock

1020056a 8/20/2018

Basement area all gender restroom fixtures and accessories

Room 004

1020056e 8/20/2018

Exterior lighting

Service court

1020057a 8/20/2018

Utility area overhead door and typical finishes

Room 001

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1020
Asset Name	Bookstore
Year Built or Last Energy Renovation	1994

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

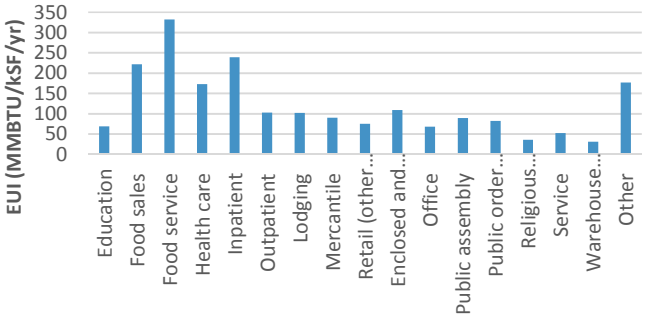
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

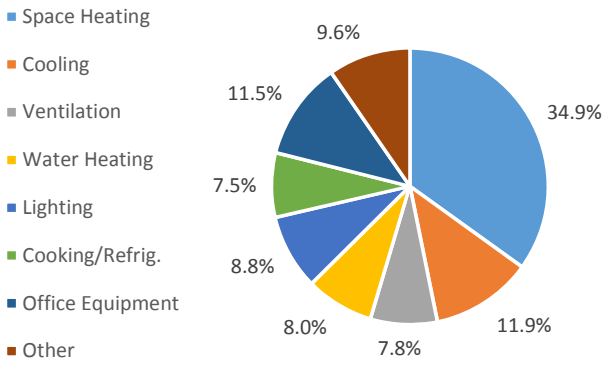


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Central Cooling	INSTALL AN ENERGY-EFFICIENT CHILLER. Energy-efficient chillers, including, but not limited to, magnetic bearing chillers, achieve higher efficiencies than conventional chillers. Research FEMP designated chillers to find the most energy-efficient options.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

South Classroom Building

Asset 1100

Inspected August 23, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

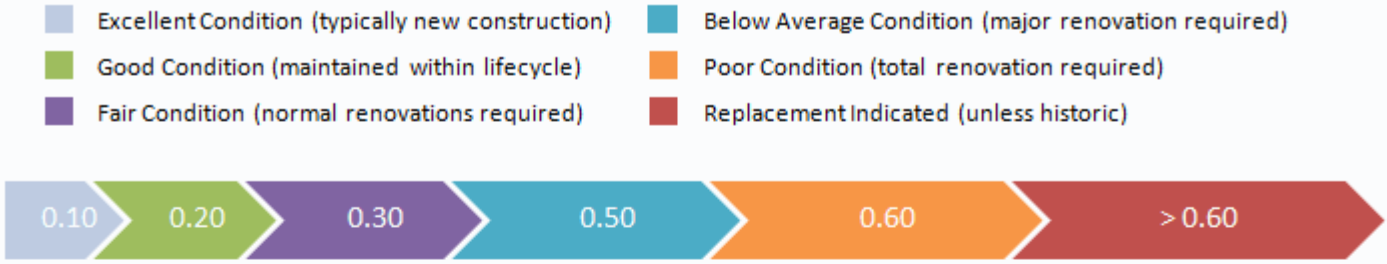
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

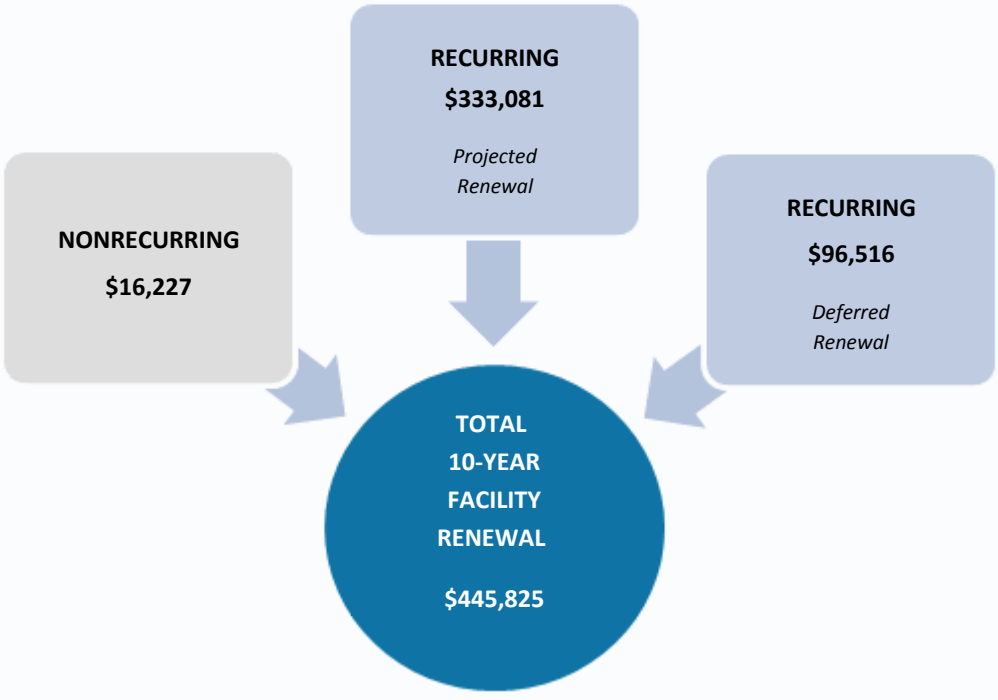
ASSET CODE	1100		
ASSET NAME	SOUTH CLASSROOM BUILDING	**CURRENT REPLACEMENT VALUE**	$5,146,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.09
YEAR BUILT	1995	**FACILITY CONDITION INDEX**	0.02
GSF	10,600	**10-YEAR $/SF**	42.06
INSPECTION DATE	08/23/2018		

FCNI Scale

The FCNI for this asset is **0.09**



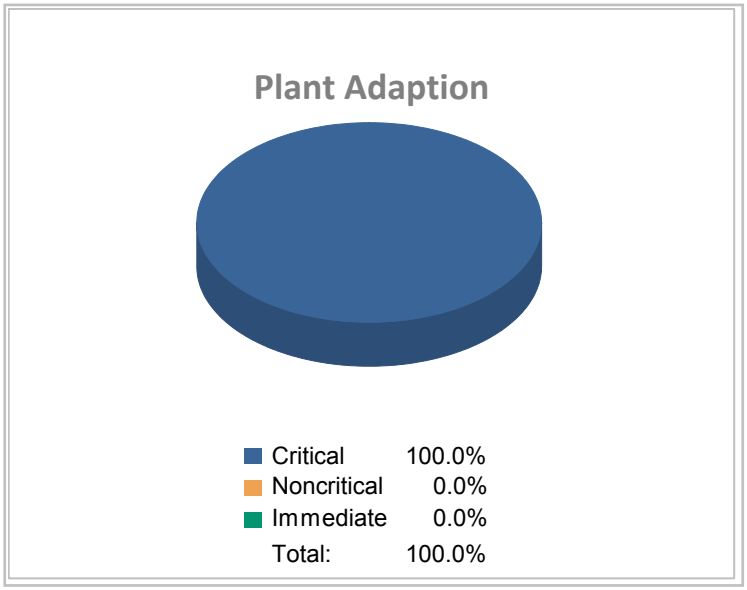
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

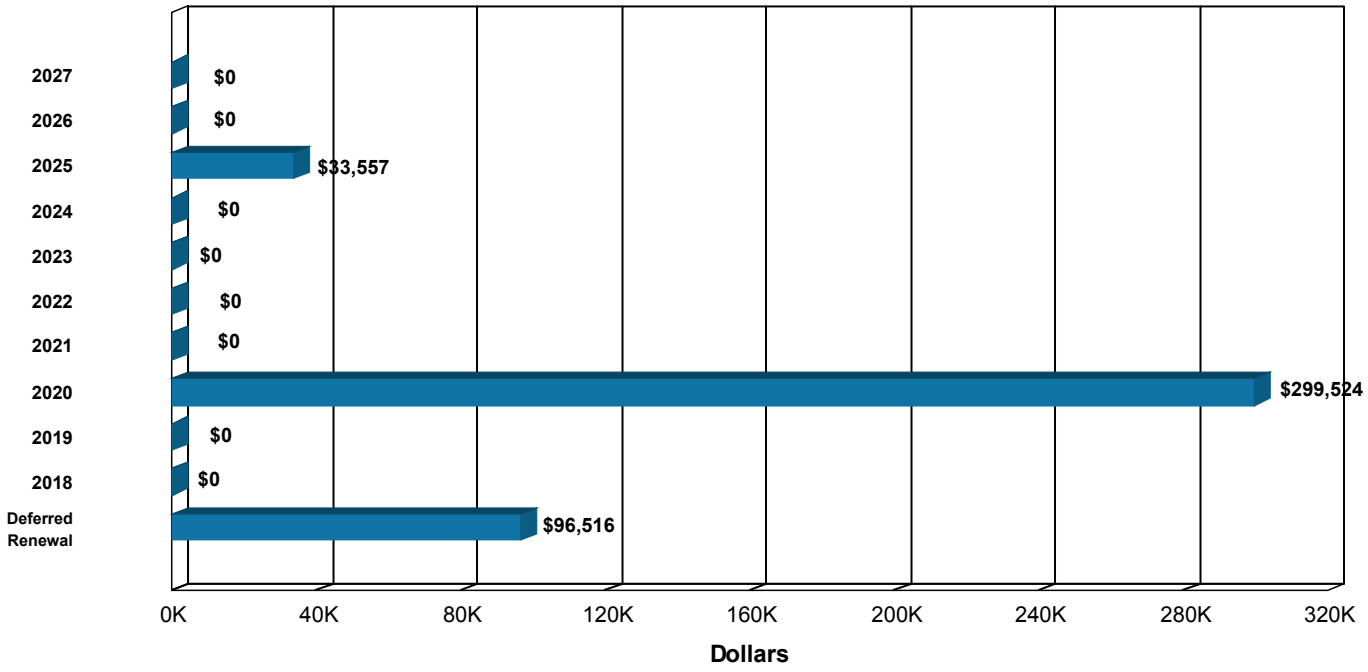
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$16,227**
3 - Noncritical	**$0**



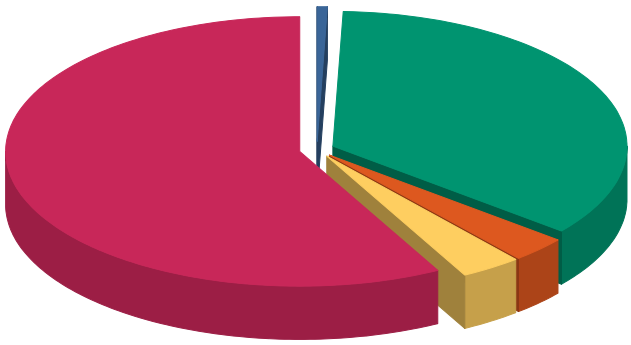
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$2,963	1%
Electrical	$0	0%
Exterior	$156,910	35%
Fire/Life Safety	$13,264	3%
Health	$0	0%
HVAC	$14,704	3%
Interiors	$0	0%
Plumbing	$0	0%
Site	$0	0%
Vert. Trans.	$257,984	58%
TOTAL	**$445,825**	

ASSET SUMMARY

The South Classroom Building is a small complex of two structures connected by utility systems and a second floor walkway. Constructed initially in 1995, these two-story buildings enclose 10,600 gross square feet of interior space and contain general use classrooms and support spaces. Both buildings have flat roofs and the southern building has a brick exterior while the northern building has a corrugated metal exterior. On the day of the site visit the buildings were undergoing renovation and much of the site and all but a few rooms in the two buildings were inaccessible. The lifecycle entries are best estimates based on the portion of the buildings available for observation.

Information for this report was gathered during a site visit conducted on August 23, 2018.

Site

The buildings are located on a relatively flat site west of the Automotive Metals Building and south of the Social Science Building. The buildings have pedestrian access on both floors from the walkways surrounding Social Science and Automotive Metals. Parking is provided by nearby campus parking lots. There was no landscaping due to construction, and it is assumed that it will be restored at the end of the project, so there are no recommendations.

Exterior Structure

The roofs of the two buildings are mineral-faced bituminous membranes which are in good condition but appear to be original and have reached the end of their anticipated lifecycle. The exterior wall finishes are brick veneer and corrugated metal. These are in good condition and no work is anticipated for the brick veneer within the scope of this report. The metal siding will reach the end of its normal lifecycle within ten years and should be refurbished or replaced during that time. The windows are insulating glass in aluminum frames and expected to last another ten years. The second floor walkways have glass canopy structures which appear to be in good condition and should not require any work in the next ten years. The exterior doors are aluminum and glass storefront style and flush hollow metal. The hollow-metal doors should last another ten years, but the storefront doors will reach the end of their lifecycle during that time and should be refurbished or replaced.

Interior Finishes/Systems

The interior walls are painted, the floors are either carpeted or a vinyl tile finish, and the ceilings are suspended acoustical tile. The interior finishes are all assumed to be new and so should last through the next ten years. The interior doors are in good condition and replacement is not anticipated. No casework was observed or noted on the floor plans.

Accessibility

The buildings were built in the early years of accessibility legislation and were substantially accessible as originally designed. There are accessible pathways to all of the room entrances and the doors have compliant hardware and signage. However, the elevator is only partially compliant with current ADA legislation. It is recommended that, unless provided by the renovation, a compliant, hands-free phone be installed in order meet the current standards.

Health

No health related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

Other than a few utility and storage rooms, all of the rooms open to the exterior and appear to be properly marked with exit signs. The second floor rooms have access to the walkways around the adjacent buildings and have multiple emergency exit options. Emergency lighting is provided by select fixtures tied to the emergency power network. This appears to be an adequate application and there are no recommendations for the equipment.

Fall protection is required for roofs over ten feet above grade to protect workers. The north building has a tall parapet around the roof and no fall protection issues were observed. However, the south building does not have any fall protection. The installation of hard looped tie-off points is recommended at intervals throughout the south building roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in a corridor leading to room 109. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been upgraded in 2018. A Wheelock mass notification panel is inventoried in this report for information purposes.

The facility has an automatic sprinkler system and additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility is on the campus hot water loop and the hot water is believed to be utilized for heating. It was reported that pumps are in room 108 for circulation. Based on their estimated age, the pumps should reach the end of their service life within the scope of this report.

A rooftop package unit (RTU) with hot water coils and DX refrigerant provides tempered air. Distribution equipment consists of metal ductwork with variable air volume (VAV) boxes. The controls are believed to have been upgraded in 2018. The HVAC system appears to be in adequate condition and has remaining service life beyond the scope of this report.

Facility exhaust is provided by three rooftop centrifugal fans that serve general exhaust needs. The fans were installed in 1995 and are in adequate condition. However, they will reach lifecycle depletion within the next ten years.

Electrical

Power is supplied to the facility at 120/208 volts via underground utilities. A main panelboard receives the power for distribution. The original unit has a rated capacity of 800 amps and is in adequate condition with remaining service life beyond the scope of this report. The electrical distribution system consists of panelboards that distribute power at 120/208 volts. Circuits are then energized for mechanical, lighting, and general purpose loads. The system is in adequate condition and appears well maintained where it could be viewed.

The interior lighting consists of suspended fixtures with parabolic lenses and lamped with either T8 fluorescent or LED bulbs. Occupancy sensors conserve energy. It was reported that the interior lighting was in the process of being replaced. Therefore, it should continue to serve the facility beyond the scope of this report.

The exterior lighting consists of wall-mounted HID fixtures along the perimeter of the buildings. Additional lighting is provided by the surrounding site and adjacent facilities. The exterior lighting scheme is in good condition with no recommendations at this time.

Emergency power is provided by district source. A GE Zenith automatic transfer switch (ATS) provides the power for distribution. Installed in 2004, it is in good condition with no recommendations.

Plumbing

Domestic water is believed to be supplied through a copper piping network and the drain piping is believed to be cast iron with no hub connections. The piping systems are estimated to be original and have remaining service life beyond the scope of this report. No domestic hot water generation equipment was observed in the facility and there are no plumbing fixtures.

Vertical Transportation

The facility has an original, two-stop hydraulic passenger elevator that is controlled by a nonproprietary controller. The car has a rated capacity of 2,000 pounds. The elevator appears to be in adequate condition and was operating properly on the day of inspection. However, it will reach end of its service life within the scope of this report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

August 23, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$FCNI = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$FCI = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	2,963	0	0	0	0	0	0	0	0	0	0	0	0	$2,963
EXTERIOR	0	0	0	96,516	0	0	30,222	0	0	0	0	30,171	0	0	$156,910
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
PLUMBING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HVAC	0	0	0	0	0	0	11,318	0	0	0	0	3,385	0	0	$14,704
FIRE/LIFE SAFETY	0	13,264	0	0	0	0	0	0	0	0	0	0	0	0	$13,264
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	257,984	0	0	0	0	0	0	0	$257,984
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$16,227	$0	$96,516	$0	$0	$299,524	$0	$0	$0	$0	$33,557	$0	$0	$445,825
TOTAL NONRECURRING PROJECT NEEDS			$16,227	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$429,598	

CURRENT REPLACEMENT VALUE	$5,146,000
FACILITY CONDITION NEEDS INDEX	0.09
FACILITY CONDITION INDEX	0.02

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
10,600	$445,825	$42.06

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$2,963	$0	$2,963
EXTERIOR	$0	$156,910	$156,910
INTERIOR	$0	$0	$0
PLUMBING	$0	$0	$0
HVAC	$0	$14,704	$14,704
FIRE/LIFE SAFETY	$13,264	$0	$13,264
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$257,984	$257,984
HEALTH	$0	$0	$0
TOTALS	**$16,227**	**$429,598**	**$445,825**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1100FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	13,264
1100AC01	ELEVATOR CAB ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,963
				TOTAL	**$16,227**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1100	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP			BUILDING 1	B3010	Deferred Renewal	41,369
1100	RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP			BUILDING 2	B3010	Deferred Renewal	55,147
1100	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				B2030	2020	30,222
1100	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS		0000004400	M202	D1010	2020	257,984
1100	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PENN BERRY	0000001154	ROOF	D3040	2020	3,773
1100	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PENN BERRY	0000001155	ROOF	D3040	2020	3,773
1100	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)				D3040	2020	3,773
1100	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				B2010	2025	30,171
1100	PH01	PUMP - ELECTRIC (<=10 HP)	PACO	0000001162	108	D3040	2025	1,693
1100	PH01	PUMP - ELECTRIC (<=10 HP)	P	0000001163	108	D3040	2025	1,693
							TOTAL	$429,598

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	1100FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$13,264
2	1100AC01	ELEVATOR CAB ACCESSIBILITY UPGRADES	2	$2,963
		TOTAL FOR PLANT ADAPTION		**$16,227**
		GRAND TOTAL:		**$16,227**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	1100AC01	2	Plant Adaption	ELEVATOR CAB ACCESSIBILITY UPGRADES	$2,963
				TOTAL FOR ACCESSIBILITY	**$2,963**
1	1100FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$13,264
				TOTAL FOR FIRE/LIFE SAFETY	**$13,264**
				GRAND TOTAL:	**$16,227**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1100FS01	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/4/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	12	$304	$3,648	$488	$5,856	$9,504
Base Material/Labor Costs				**$3,648**		**$5,856**	
Indexed Material/Labor Costs				**$3,626**		**$5,903**	**$9,529**
Construction Mark Up at 20.0%							**$1,906**
Original Construction Cost							**$11,435**
Date of Original Estimate: 12/4/2018						**Inflation**	**$0**
Current Year Construction Cost							**$11,435**
Professional Fees at 16.0%							**$1,830**
TOTAL PROJECT COST							**$13,264**

All costs shown as Present Value

ELEVATOR CAB ACCESSIBILITY UPGRADES

Project Number:	1100AC01	**Category Code:** AC3A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/4/2018	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	407	Not Applicable	Item Only: Floor(s) 1

Description

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. The elevator is only partially compliant with current ADA legislation. It is recommended that a compliant, hands-free phone be installed in order meet the current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, hands-free elevator emergency telephone	EA	1	$1,227	$1,227	$902	$902	$2,129
			Base Material/Labor Costs	**$1,227**		**$902**	
			Indexed Material/Labor Costs	**$1,219**		**$909**	**$2,129**
					Construction Mark Up at 20.0%		**$426**
					Original Construction Cost		**$2,554**
Date of Original Estimate: 12/4/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$2,554**
					Professional Fees at 16.0%		**$409**
					TOTAL PROJECT COST		**$2,963**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				1,980	SF	1.12	$30,171	1995	30		2025
WN05	GLASS, STOREFRONT				1,400	SF	1.12	$197,660	1995	40		2035
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM	GLASS SHADE STRUCTURES			700	SF	1.12	$171,648	1995	40		2035
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				10	LEAF	1.00	$30,222	1995	25		2020
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				2	LEAF	1.00	$4,013	1995	40		2035
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			10	EA	1.00	$9,464	2018	12		2030
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DRS			2	EA	1.00	$1,893	2018	12		2030
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP			BUILDING 1	2,372	SF	1.00	$41,369	1995	20	2	DR
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP			BUILDING 2	3,162	SF	1.00	$55,147	1995	20	2	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				4	LEAF	1.00	$8,846	1995	60		2055
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				4	EA	1.00	$3,012	1995	35		2030
IW01	WALL FINISH - APPLIED, STANDARD				17,600	SF	1.00	$49,122	2018	12		2030
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				8,830	SF	1.00	$105,195	2018	12		2030
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				180	SF	1.00	$1,239	2018	20		2038
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				8,830	SF	1.00	$98,279	2018	45		2063

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				180	SF	1.00	$502	2018	24		2042
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS		0000004400	M202	1	EA	1.00	$257,984	1995	25		2020
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				10,600	SF	1.00	$121,379	1995	50		2045
PD02	DRAIN PIPING SYSTEM - CLASSROOM				10,600	SF	1.00	$182,111	1995	60		2055
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PENN BERRY	0000001154	ROOF	1	EA	1.00	$3,773	1995	25		2020
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PENN BERRY	0000001155	ROOF	1	EA	1.00	$3,773	1995	25		2020
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)				1	EA	1.00	$3,773	1995	25		2020
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				10,600	SF	1.00	$377,086	1995	45		2040
PH01	PUMP - ELECTRIC (<=10 HP)	PACO	0000001162	108	1	HP	1.00	$1,693	1995	30		2025
PH01	PUMP - ELECTRIC (<=10 HP)	P	0000001163	108	1	HP	1.00	$1,693	1995	30		2025
HU38	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, MULTI-ZONE (35-55 TON)	RTU-1	0000001156	ROOF	50	TON	1.00	$332,154	2018	25		2043
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				10,600	SF	1.00	$35,910	2018	20		2038
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				10,600	SF	1.00	$9,993	2018	10		2028
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				10,600	SF	1.00	$5,310	2018	10		2028
FS01	FIRE SPRINKLER SYSTEM - WET				10,600	SF	1.00	$143,404	1995	80		2075

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA01	FIRE ALARM SYSTEM - DEVICES			109	10,600	SF	1.00	$45,559	2018	18		2036
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		109	1	EA	1.00	$2,254	2018	18		2036
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		109	1	EA	1.00	$2,254	2012	18		2030
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				10,600	SF	1.00	$263,231	1995	50		2045
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	2B2N	0000001171	109	800	AMP	0.15	$8,741	1995	40		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			12	EA	1.00	$9,259	2018	20		2038
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				10,600	SF	1.00	$119,034	2018	20		2038
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				10,600	SF	1.00	$24,343	2018	20		2038
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	GE ZENITH	0000001170	109	40	AMP	1.00	$2,364	2004	25		2029
							Grand Total:	$2,764,858				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		2,372	SF	$41,369	DR
B3010	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP		3,162	SF	$55,147	DR
				TOTAL DEFERRED RENEWAL COST	$96,516	

No Projected Component Replacement Cost for Asset No. 1100 for 2018

No Projected Component Replacement Cost for Asset No. 1100 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PENN BERRY	1	EA	$4,003	2020
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PENN BERRY	1	EA	$4,003	2020
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		1	EA	$4,003	2020
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS		1	EA	$273,695	2020
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS		10	LEAF	$32,063	2020
	2020			PROJECTED COMPONENT REPLACEMENT COST	$317,766	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1100 for 2021

No Projected Component Replacement Cost for Asset No. 1100 for 2022

No Projected Component Replacement Cost for Asset No. 1100 for 2023

No Projected Component Replacement Cost for Asset No. 1100 for 2024

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	PUMP - ELECTRIC (<=10 HP)	PACO	1	HP	$2,082	2025
D3040	PUMP - ELECTRIC (<=10 HP)	P	1	HP	$2,082	2025
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED		1,980	SF	$37,107	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$41,271**	

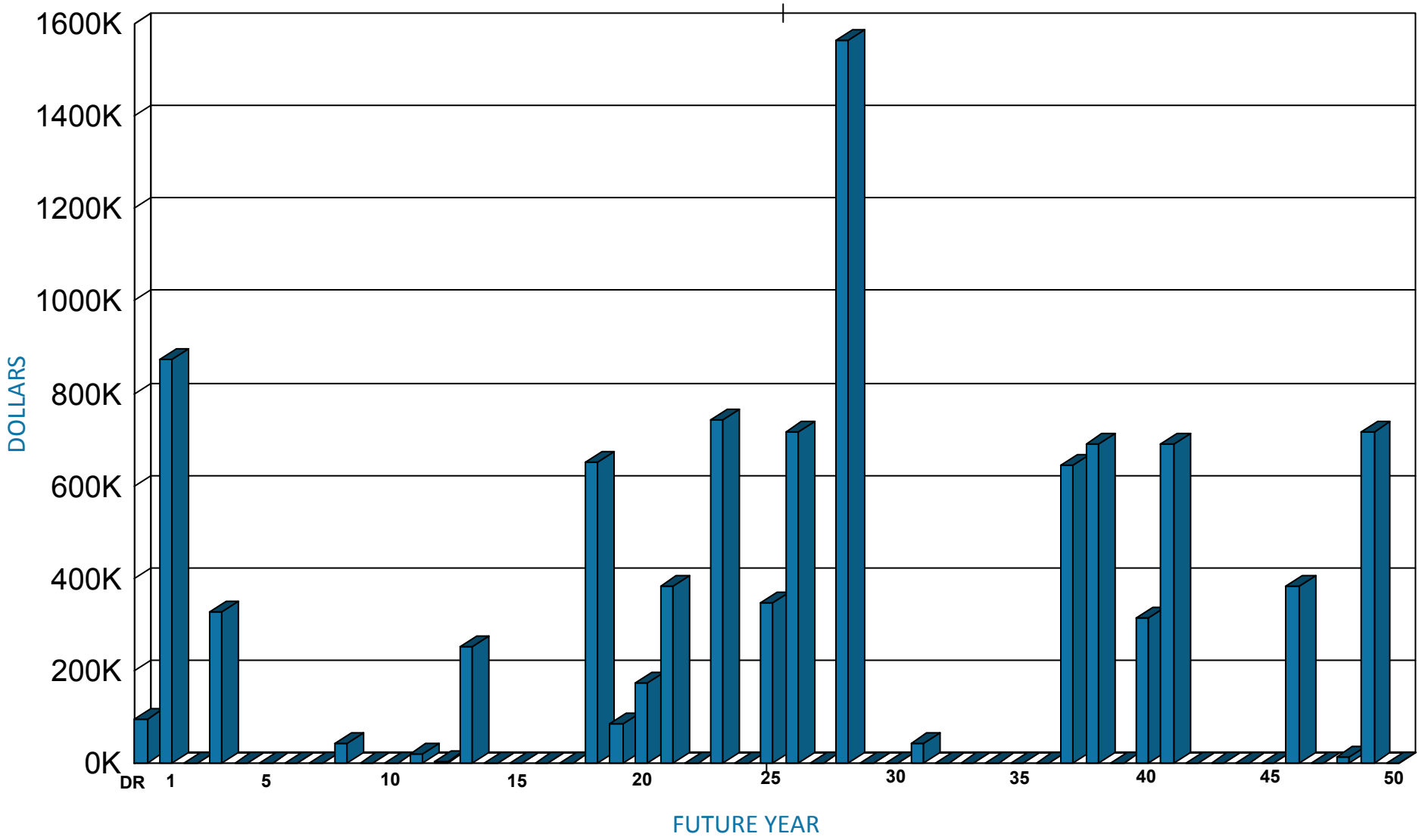
No Projected Component Replacement Cost for Asset No. 1100 for 2026

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1100 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



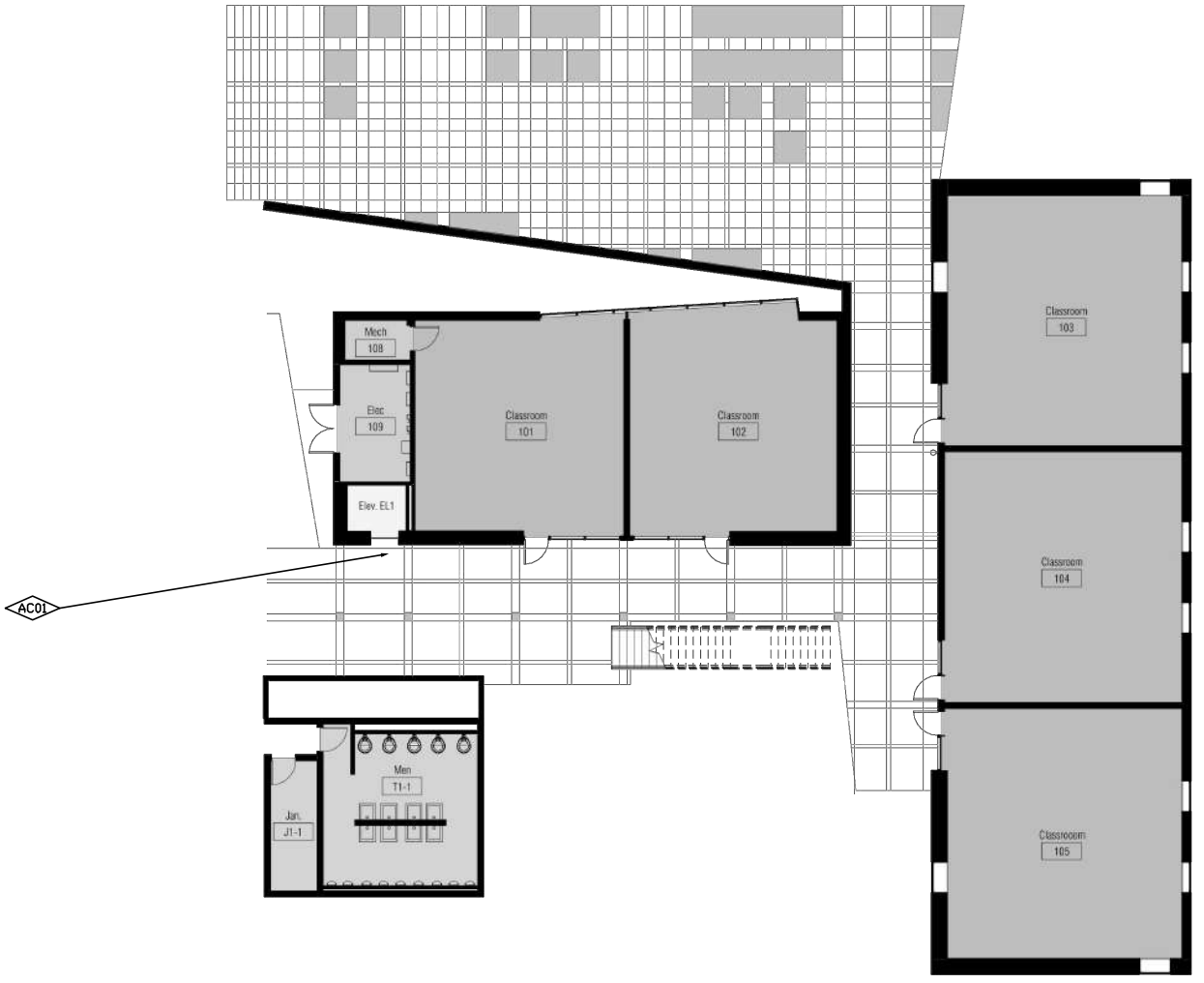
Average Annual Renewal Cost per SF $8.86

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



SOUTH
CLASSROOM
BUILDING

BLDG NO. 1100

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

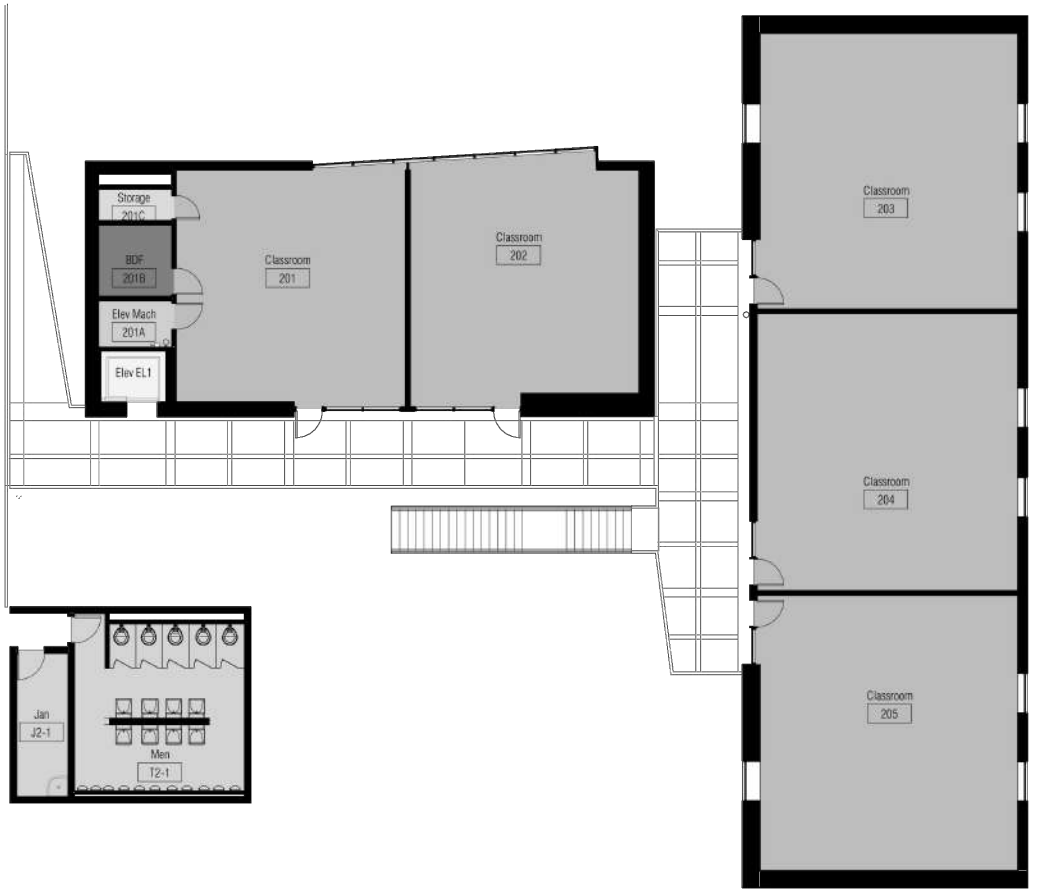
Date: 12/14/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF
FS01



SOUTH
CLASSROOM
BUILDING

BLDG NO. 1100

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/14/2018
Drawn by: A.W.
Project No. 18-064

SECOND
FLOOR
PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1100001a 8/23/2018

First floor walkway and exterior finish

South elevation

1100001e 8/23/2018

Panelboard

First floor, room 109

1100002a 8/23/2018

Upper floor glass canopy structure

South elevation

1100002e 8/23/2018

Panelboard

First floor, room 109

1100003a 8/23/2018

Glass canopy

East elevation of south building

1100003e 8/23/2018

Panelboard

First floor, room 109

1100004a 8/23/2018

Detail at the glass canopy

North elevation

1100004e 8/23/2018

Automatic transfer switch

First floor, room 109

1100005a 8/23/2018

Exterior finishes

North elevation of south building

1100005e 8/23/2018

Elevator machine and controller

Second floor, room M201A

1100006a 8/23/2018

Exterior finishes

North elevation of south building

1100006e 8/23/2018

Digital thermostat

Second floor, room M202

1100007a 8/23/2018

Exterior finishes

South elevation of south building

1100007e 8/23/2018

Elevator machine and controller

Second floor, room M202

1100008a 8/23/2018

Exterior finishes

East elevation of north building

1100008e 8/23/2018

Sprinkler head and smoke detector

Second floor, room M202

1100009a 8/23/2018

Exterior finishes

North elevation of north building

1100009e 8/23/2018

Electrical disconnect switch and fire extinguisher

Second floor, room M202

1100010a 8/23/2018

Exterior finishes

East elevation

1100010e 8/23/2018

Interior lighting

Second floor, room 201

1100011a 8/23/2018

Elevator control panel with noncompliant covered phone

Elevator

1100011e 8/23/2018

Interior lighting

Second floor, room 201

1100012a 8/23/2018

Classroom storefront system

Room 201

1100012e 8/23/2018

Interior lighting

Second floor, room 201C

1100013a 8/23/2018

Compliant room signage

Room 201

1100013e 8/23/2018

Fire alarm panels

Second floor, room 201B

1100014a 8/23/2018

Floor in the utility area

Room 201B

1100014e 8/23/2018

Exhaust fan

Roof

1100015a 8/23/2018

Roof and mechanical screen

North building roof

1100015e 8/23/2018

Exhaust fan

Roof

1100016a 8/23/2018
Roof-mounted equipment and mechanical screen wall
Roof

1100016e 8/23/2018
Package HVAC unit
Roof

1100017a 8/23/2018
Roof access
North building roof

1100017e 8/23/2018
Exhaust fan
Roof

1100018a 8/23/2018
Typical roof condition
North building roof

1100018e 8/23/2018
Exterior lighting
South elevation

1100019a 8/23/2018

Roof without fall protection

South building roof

1100019e 8/23/2018

Exterior finishes

South elevation of south building

1100020a 8/23/2018

Roof without fall protection

South building roof

1100020e 8/23/2018

Exterior finishes

East elevation of south building

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	POTLAND COMMUNITY COLLEGE
Asset Number	1100
Asset Name	South Classroom Building
Year Built or Last Energy Renovation	1100

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

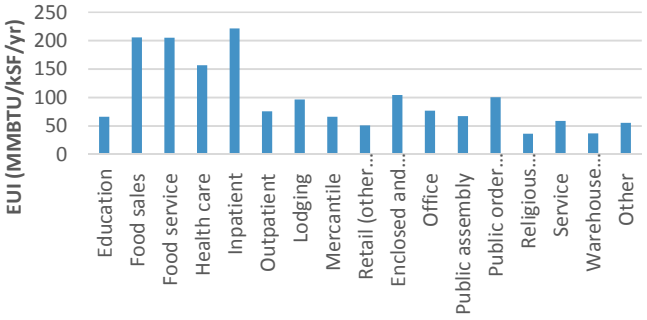
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	Pre-1960
Benchmark EUI (MMBTU/kSF/yr) =	**66.3**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 46.4
Energy Efficient (consumes 10% to 30% less energy)	46.4 <= EUI <= 59.7
Similar (consumes within 10% less or 10% more energy)	59.7 < EUI < 72.9
Energy Inefficient (consumes 10% to 30% more energy)	72.9 <= EUI <= 86.2
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 86.2

Figure 1. EUIs for Buildings Constructed/Renovated Pre-1960

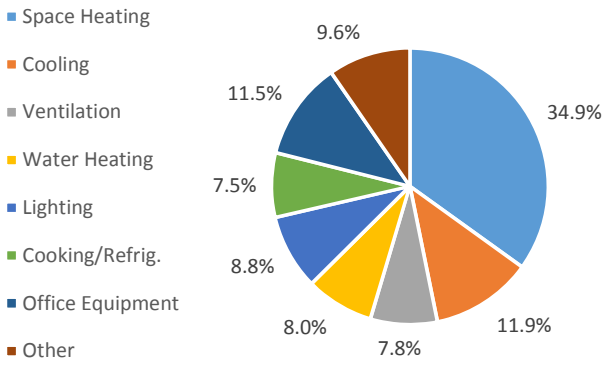


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	No ECM recommendations	

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

College Center

Asset 1030

Inspected August 22, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

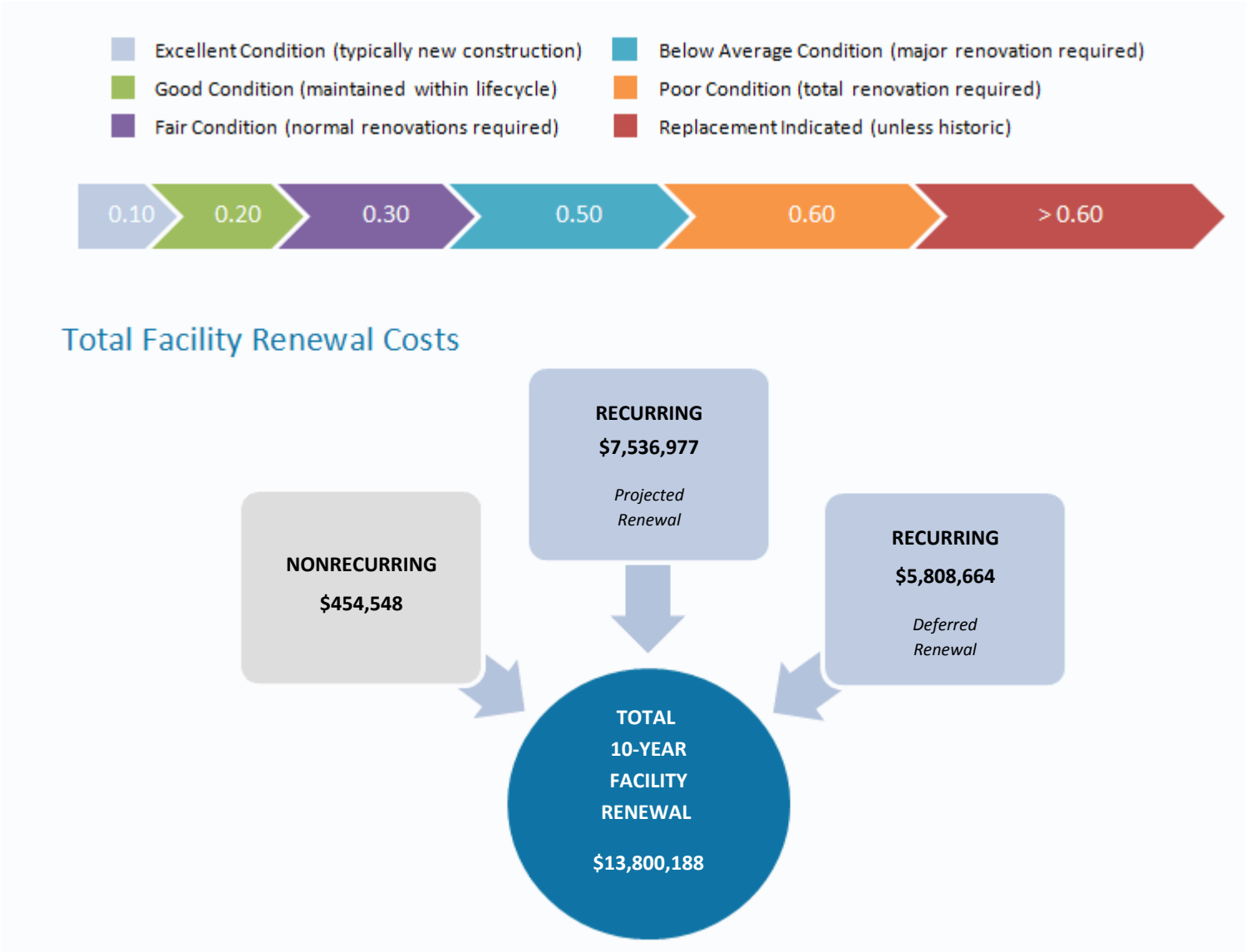
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

ASSET CODE	1030	**CURRENT REPLACEMENT VALUE**	$62,096,000
ASSET NAME	COLLEGE CENTER	**FACILITY CONDITION NEEDS INDEX**	0.22
ASSET USE	Student Union	**FACILITY CONDITION INDEX**	0.09
YEAR BUILT	1972	**10-YEAR $/SF**	74.98
GSF	184,042		
INSPECTION DATE	08/22/2018		

FCNI Scale

The FCNI for this asset is **0.22**

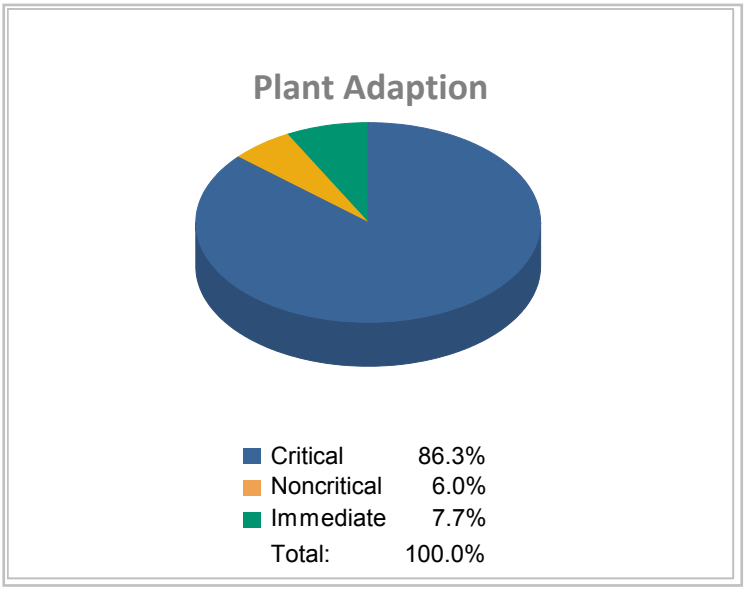


Total Facility Renewal Costs

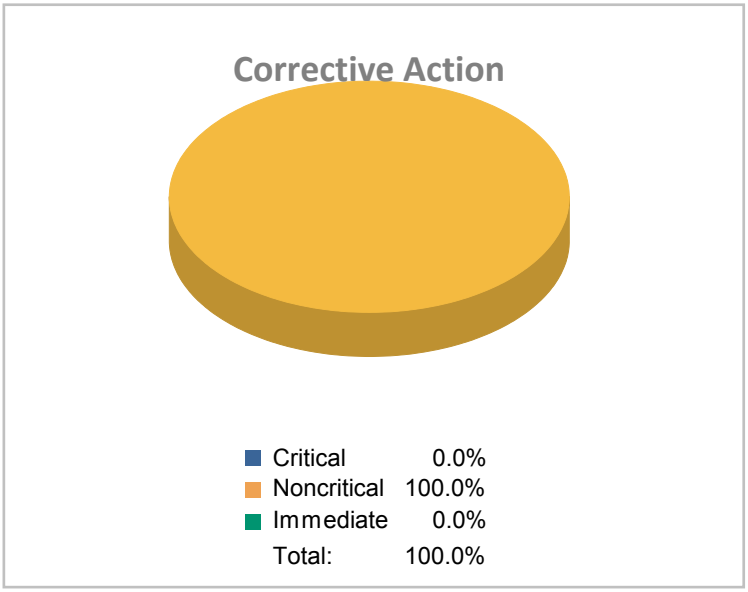
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$33,994**
2 - Critical	**$380,022**
3 - Noncritical	**$26,286**

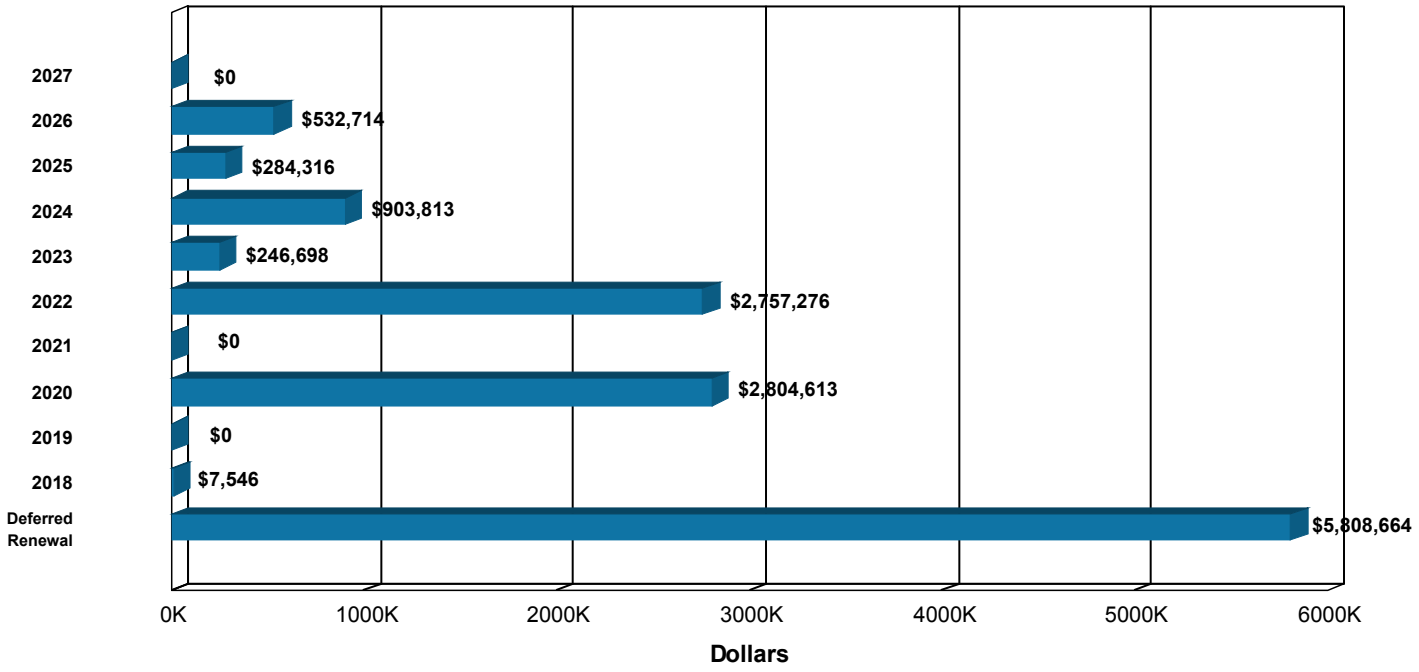


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$14,245**

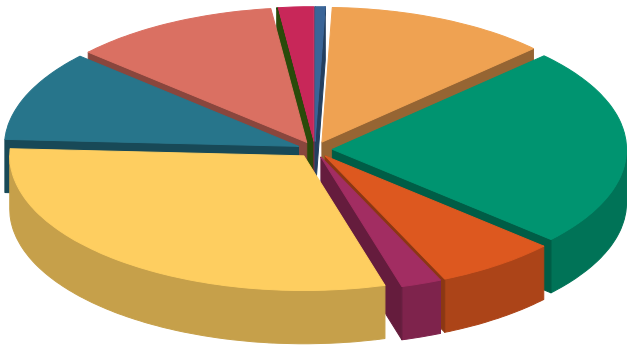


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$66,637	0%
Electrical	$1,697,584	12%
Exterior	$3,300,004	24%
Fire/Life Safety	$904,250	7%
Health	$309,314	2%
HVAC	$4,188,370	30%
Interiors	$1,503,618	11%
Plumbing	$1,566,232	11%
Site	$6,196	0%
Vert. Trans.	$257,984	2%
TOTAL	**$13,800,188**	

ASSET SUMMARY

The Campus Center is an 184,042 square foot multi-purpose building on the Portland Community College, Sylvania campus. This two-story building is one of six early buildings constructed in the Brutalist style using concrete post-and-beam construction with concrete T-members for floors and roof, and brick, wood, and glass exterior walls. The roof and intermediate floor structure overhang the exterior walls, creating outdoor covered walks. The large common areas have skylights and light monitors to introduce daylight into the interior of the building. The Campus Center contains the main campus dining facility, student support organizations, and various support facilities for a variety of programs and courses at the college.

Information for this report was gathered during a site visit conducted on August 22, 2018.

Site

The building is located on a sloping site near the center of the campus and north of the Social Science and Science Technology buildings. The building is surrounded by concrete walkways, most of which are in good condition. However, some areas of cracked concrete were observed and it is recommended that these areas be replaced. Parking is available in shared campus lots. The landscaping is minimal but appropriate and in good condition.

Exterior Structure

The main and atrium roofs are silver-coated, asphaltic, multi-ply membranes which will reach the end of their normal lifecycle in the next few years. It is recommended that the membranes be replaced at that time. Skylights, gutters, and light monitors vary in age and condition but all should last another ten years. The exterior walls are cast concrete structural elements with infill of brick, wood, and steel-framed glazing. The brick is in good condition. The wood material also appears to be in good condition but should be refinished within the next ten years. The original windows are single-glazed in steel frames. The steel is in good condition but the glass is beyond its normal useful service life and should be replaced. The newer glazing systems were installed in 2014 during a major renovation and should outlast the scope of this report. The concrete is in very good condition but should be cleaned and any joints cleaned and recaulked where needed. Exterior doors are aluminum and glass storefront style and flush, hollow-metal units. The hollow-metal units are in need of replacement, while the aluminum and glass units all appear to be in good condition and should last another ten years.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, sheet vinyl tile, sealed concrete, and ceramic tile. Recent renovations have replaced many floor finishes such as the carpet, vinyl tile, sheet vinyl, and some

ceramic tile. The new ceramic tile as well as the sheet vinyl and vinyl tile floors should last another ten years. The carpet and sealed floors should be replaced or renewed within the next ten years.

Walls are painted, clear finished, or ceramic tile. The painted surfaces should be repainted and the clear finished wood interior surfaces of the exterior wood wall material should be refinished in the next ten years. Ceramic tile wall finishes are in acceptable to good condition and should last beyond the scope of this report. Some areas of the kitchen walls are finished with Fiberglass Reinforced Plastic (FRP) panels which are old and worn in appearance and should be replaced. Ceilings are suspended acoustical tile, perforated wood, wood slats, or painted hard surfaces. All of the ceilings should last another ten or more years. Break room and workroom casework is all relatively new and no work is recommended. The wood interior doors and the overhead coiling grilles are in good condition with no recommendations.

Accessibility

This building was built before current accessibility legislation but was upgraded significantly during the 2014 renovation and now includes accessible features such as grade-level access to the main entrances with powered door openers. Inside the building there is accessible door hardware and signage, compliant elevator control panels, accessible restrooms, and accessible drinking fountains. However, some barriers to full accessibility were noted during inspection and should be addressed.

Accessibility legislation requires that building entrances have certain accessible features. To comply with the intent of this legislation, it is recommended that compliant handrails be installed at the exterior ramps at the loading dock and at the west and south exterior walkways where they are missing. Additionally, exterior stairs with rectangular tube handrails do not meet current grip profile standards and should be replaced. Handrails with a compliant profile should be installed where missing.

The configuration of the drinking fountains is a barrier to accessibility. All single-level drinking fountains should be replaced with dual-level units. Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Drinking fountains which do not meet this requirement should have cane guards or alcove walls added.

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

Stairways shall have intermediate handrails located in such a manner that all portions of the stairway minimum width or required capacity are within 30 inches of a handrail. It is recommended that the open common area stairways have intermediate handrails installed as currently required. Additionally, stairs should have graspable handrails on both sides, the rails should have a specific end geometry, and the handrails should continue horizontally at the landings. The interior stairs with rectangular tube handrails do not meet current grip profile standards and should be replaced. Handrails with a compliant profile should be installed where missing. The stair from the kitchen area to the ground floor is missing the

required handrails, as are several sets of steps in the ground floor mechanical area. Steps to the stage in the dining area are missing one required handrail. Install compliant handrail systems at all noncompliant interior stair locations.

Health

The commercial kitchen was clean and well maintained on the day of the site visit. The equipment should last another ten or more years. There are seven coolers or freezers serving the kitchen area. The equipment was originally placed in service in 2002. Two of the units have had the mechanical systems upgraded. The coolers or freezers are in good condition and the containers have substantial remaining life. However, the remaining original mechanical components have reached lifecycle depletion.

Asbestos may be present on utility piping. If the asbestos is present the substance will need to be abated during the next modernization.

Fire/Life Safety

Exit access in this building is adequate and marked with illuminated exit signage in most areas. The Administration suite (room 223C) should have exit lights added to clarify the exit access route. Emergency lighting is provided by select fixtures tied to the emergency power network. This appears to be an adequate application and there are no recommendations for the equipment.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility including electrical and mechanical spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in a corridor of the tunnel. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been installed in 2004 with the main panel upgraded in 2014. Based on industry standards, the fire alarm devices will reach the end of their service life within the scope of this report. A Wheelock mass notification panel is inventoried in this report for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations. Additionally, an IT room is equipped with a wet-chemical

FM200 fire suppression system. The system is believed to have been placed in service in 2013 and has substantial remaining service life.

HVAC

The facility is on the campus hot water loop for heating. An expansion tank supports the system. Chilled water for cooling is provided by three air-cooled chillers that were installed between 2004 and 2013. They have cooling capacities ranging from 60 to 150 tons. Pumps circulate the hot and chilled water throughout the building. This HVAC equipment is in good condition and most of the equipment has substantial remaining service life. Some pumps, however, may need to be considered for replacement within the scope of this report.

The facility incorporates both indoor and rooftop exterior air handling units (AHUs) for tempered air. The AHUs contain hot and chilled water coils and the indoor AHUs have two return fans. Distribution equipment consists of metal ductwork equipped with either reheat coils or variable air volume (VAV) boxes. The controls were recently upgraded to a digital application. The HVAC system is a combination of new and original equipment with all of the outdoor AHUs replaced in the last five years some of the distribution replaced. All of the remaining original HVAC equipment has reached the end of its service life and is recommended for replacement. Additionally, a partial HVAC control upgrade should be anticipated over the next ten years.

Supplemental heating and cooling is provided by a rooftop package unit. Additionally, there are several split system and five computer room air conditioners (CRAC) for cooling only to specific rooms. The unitary equipment is charged with DX refrigerant. Heating is also provided by make-up air handling units for the kitchen. Most of the unitary equipment is new and has substantial remaining service life. Some of the equipment will reach the end of its service life within the next ten years and should be upgraded.

Facility exhaust is provided by an inline centrifugal exhaust fan, utility set type exhaust fans, and rooftop centrifugal fans. The fans serve restrooms, kitchen hoods, and general exhaust needs. The exhaust fans were installed at different times and are in adequate condition. However, most of the fans have reached, or will reach, the end of their service life within the scope of this report. Several hoods serve the kitchen and are believed to have been placed in service in 2002. They are well maintained and should continue to serve the facility beyond the next ten years.

Electrical

Power is supplied to the facility from oil-filled transformers on the site. The transformers supply the power at 480/277 and 120/208 volts. There are four main exterior switchboards to supply the power to the facility. These Square D units were installed in 2004 and are in adequate condition. The equipment has remaining service life beyond the scope of this report.

The electrical distribution system consists of panelboards that distribute power at 480/277 volts or 120/208 volts and dry-type transformers that step power down from 480/277 volts to 120/208 volts. Circuits are energized for mechanical, lighting, and general purpose loads. The distribution system

appears to be a combination of various installations. Most of the equipment has been replaced with substantial work performed in the last fifteen years. It is believed that a portion of original equipment is still in service and will reach the end of its normal lifecycle within the scope of this report. The newer systems have remaining service life.

The interior lighting consists of surface-mount, lay-in, and suspended fixtures equipped with parabolic, acrylic, or no lenses. The lighting is lamped with T8 fluorescent bulbs. Occupancy sensors in select rooms conserve energy. Additional lighting is provided by recessed can-type fixtures lamped with compact fluorescent bulbs. The interior lighting appears to be well maintained and in good condition. However, some original lighting is present in the penthouse and lower mechanical spaces. Additionally, it is estimated that the lighting upgraded in 2004 will reach the end of its service life within the scope of this report.

The exterior lighting consists of eave-mounted fixtures with T8 fluorescent bulbs, wall-mounted LED fixtures, and recessed wall-mounted fixtures. Additional lighting is provided by the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, some of the fixtures have reached lifecycle depletion and should be considered for upgrade.

Emergency power is provided by a 500 kW, Cummins diesel-fired generator that provides power at 480/277 volts. Four automatic transfer switches (ATSs) provide the power for distribution. An aboveground storage tank provides diesel fuel for the generator. The emergency power equipment is well maintained and in good condition. Additionally, there are uninterruptable power supplies (UPS) serving IT rooms. The units are in excellent condition and should continue to serve the facility.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the AHUs, exhaust fans, pumps and supply fans. The VFDs are in adequate condition and were installed at different times. While most will continue to serve the facility beyond the scope of this report, one will need to be considered for replacement in the next ten years.

Plumbing

Domestic water is supplied through a copper or galvanized piping network. A backflow preventer protects the system from cross contamination. Drain piping is cast-iron with hub-and-spigot connections. The piping systems, where they could be viewed, appear to be mostly original and in adequate condition. However, based on age, replacement of the original domestic water system should be anticipated within the scope of this report.

Domestic hot water for select restrooms is provided by a Bradford White, residential-grade electric water heater. Based on its estimated age, the water heater has reached the end of its normal lifecycle. Several sinks also have instantaneous water heaters. These units appear to be well maintained although they will reach lifecycle depletion within the scope of this report. Domestic hot water for the kitchen is believed to be supplied from the heat plant.

A duplex compressor once supplied control air but is believed to no longer be in service. It is in adequate condition with no recommendations.

Plumbing fixtures include water closets, urinals, lavatories, break area sinks, and utility sinks. The original utility sinks should be replaced while the newer ones will outlast the scope of this report. The remaining fixtures are in good condition and should serve another ten or more years.

Vertical Transportation

The facility has two passenger elevators. There is a Kone machine-room-less (MRL) elevator that serves four floors and appears to be well maintained. It should continue to serve the facility beyond the scope of this report. Additionally, a hydraulic elevator controlled by a nonproprietary MCE controller serves two floors. It was operating properly on the day of inspection and appears to be well maintained. This elevator will reach the end of its recommended service life within the scope of this report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
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Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 22, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	26,721	13,630	26,286	0	0	0	0	0	0	0	0	0	0	0	$66,637
EXTERIOR	0	0	8,050	508,138	0	0	2,717,971	0	6,494	0	0	0	59,351	0	$3,300,004
INTERIOR	0	0	0	1,087,009	0	0	0	0	0	0	0	0	416,609	0	$1,503,618
PLUMBING	0	0	0	1,823	0	0	990	0	1,561,439	0	0	0	1,980	0	$1,566,232
HVAC	0	0	0	3,749,661	7,546	0	85,652	0	0	246,698	17,707	26,333	54,774	0	$4,188,370
FIRE/LIFE SAFETY	7,273	105,959	0	0	0	0	0	0	791,018	0	0	0	0	0	$904,250
ELECTRICAL	0	0	0	413,153	0	0	0	0	398,324	0	886,107	0	0	0	$1,697,584
SITE	0	0	6,196	0	0	0	0	0	0	0	0	0	0	0	$6,196
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	257,984	0	0	$257,984
HEALTH/EQUIP.	0	260,433	0	48,881	0	0	0	0	0	0	0	0	0	0	$309,314
SUBTOTAL	$33,994	$380,022	$40,531	$5,808,664	$7,546	$0	$2,804,613	$0	$2,757,276	$246,698	$903,813	$284,316	$532,714	$0	$13,800,188
TOTAL NONRECURRING PROJECT NEEDS			$454,548	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$13,345,641	

CURRENT REPLACEMENT VALUE	$62,096,000
FACILITY CONDITION NEEDS INDEX	0.22
FACILITY CONDITION INDEX	0.09

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
184,042	$13,800,188	$74.98

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$66,637	$0	$66,637
EXTERIOR	$8,050	$3,291,954	$3,300,004
INTERIOR	$0	$1,503,618	$1,503,618
PLUMBING	$0	$1,566,232	$1,566,232
HVAC	$0	$4,188,370	$4,188,370
FIRE/LIFE SAFETY	$113,232	$791,018	$904,250
ELECTRICAL	$0	$1,697,584	$1,697,584
SITE	$6,196	$0	$6,196
VERT. TRANS	$0	$257,984	$257,984
HEALTH	$260,433	$48,881	$309,314
TOTALS	**$454,548**	**$13,345,641**	**$13,800,188**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1030AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	26,721
1030FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	7,273
1030FS03	ADD EXIT SIGNS		2	Plant Adaption	950
1030FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	105,009
1030AC03	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	5,975
1030AC04	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	7,655
1030HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	2	Plant Adaption	260,433
1030ES01	EXTERIOR WALL FINISH RENEWAL		3	Corrective Action	8,050
1030AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	26,286
1030SI01	SITE PEDESTRIAN PAVING RENEWAL	G2030	3	Corrective Action	6,196
				TOTAL	**$454,548**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1030	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	Deferred Renewal	2,303
1030	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				B2020	Deferred Renewal	433,498
1030	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	32,105
1030	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	15,143
1030	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	ATRIUM ROOF			B3010	Deferred Renewal	25,089
1030	DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIGINAL DR			C1020	Deferred Renewal	753
1030	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	575,226
1030	IW09	WALL FINISH - WALL COVERING, ROLL	FRP			C3010	Deferred Renewal	78,338
1030	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			C3020	Deferred Renewal	276,138
1030	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	156,553
1030	WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	0000001343	112A	D2020	Deferred Renewal	1,823
1030	AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	MZU-6	0000001352	110B	D3040	Deferred Renewal	19,228
1030	AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	MZU-7	0000001348	M1-02	D3040	Deferred Renewal	19,228
1030	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	MZU-8	0000000917	M1-5	D3040	Deferred Renewal	41,957
1030	AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	SF-10	0000000921	M1-5	D3040	Deferred Renewal	122,893
1030	AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-11	0000000919	M1-5	D3040	Deferred Renewal	175,314

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1030	AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	SF-9	0000000902	M1-3	D3040	Deferred Renewal	221,108
1030	FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	EF-20		M1-5	D3040	Deferred Renewal	14,212
1030	FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	EF-22		M1-5	D3040	Deferred Renewal	14,212
1030	FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)			112A	D3040	Deferred Renewal	1,321
1030	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-16	0000000543	PENTHOUSE	D3040	Deferred Renewal	5,466
1030	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-18	0000000545	PENTHOUSE	D3040	Deferred Renewal	5,466
1030	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000558	PENTHOUSE	D3040	Deferred Renewal	5,466
1030	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000559	PENTHOUSE	D3040	Deferred Renewal	5,466
1030	FN35	FAN - UTILITY SET, 1/4" SP (12-17 HP)	EF-15	0000000906	M1-3	D3040	Deferred Renewal	23,457
1030	HV21	HVAC DISTRIBUTION NETWORKS - STUDENT UNION	ORIGINAL			D3040	Deferred Renewal	3,073,175
1030	PH01	PUMP - ELECTRIC (<=10 HP)		0000000922	M1-5	D3040	Deferred Renewal	1,693
1030	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SF-10	0000005748	M1-5	D5010	Deferred Renewal	7,904
1030	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED			D5020	Deferred Renewal	3,051
1030	LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	ORIGINAL			D5020	Deferred Renewal	402,198
1030	CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#7		118	E1020	Deferred Renewal	9,776
1030	CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#1		259	E1020	Deferred Renewal	9,776

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1030	CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#3		259	E1020	Deferred Renewal	9,776
1030	CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#4		259	E1020	Deferred Renewal	9,776
1030	CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#5		259	E1020	Deferred Renewal	9,776
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000000496	ROOF	D3040	2018	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000000515	ROOF	D3040	2018	3,773
1030	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	MAIN ROOF			B3010	2020	2,717,971
1030	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		247G	D2020	2020	990
1030	AH37	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	CRAC-3		219D	D3050	2020	85,652
1030	EW15	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - PAINT	PENTHOUSE			B2010	2022	6,494
1030	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			D2010	2022	3,329
1030	PS21	SUPPLY PIPING SYSTEM - STUDENT UNION	ORIGINAL			D2020	2022	1,558,110
1030	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2022	791,018
1030	SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION	ORIGINAL			D5010	2022	398,324
1030	BA44	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - STUDENT UNION				D3060	2023	162,658
1030	BA67	HVAC CONTROLS - MAJOR INSTRUMENTATION - STUDENT UNION				D3060	2023	84,040

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1030	AH25	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (140-208 MBH INPUT)	MAU 1.1	0000000499	ROOF	D3040	2024	12,241
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-14	0000000500	ROOF	D3040	2024	3,773
1030	PH01	PUMP - ELECTRIC (<=10 HP)	CP-33	0000000926	M1-5	D3040	2024	1,693
1030	LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	2004 INSTALL			D5020	2024	886,107
1030	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MCE	0000004414	M1-4	D1010	2025	257,984
1030	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	SANYO	0000000927	SITE	D3030	2025	3,435
1030	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	KARPAK	0000000529	ROOF	D3030	2025	22,898
1030	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2026	59,351
1030	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	416,609
1030	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		214E	D2020	2026	990
1030	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		201C	D2020	2026	990
1030	AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-3	0000000521	ROOF	D3040	2026	17,692
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-0	0000005938	ROOF	D3040	2026	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000000526	ROOF	D3040	2026	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	0000000522	ROOF	D3040	2026	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000000520	ROOF	D3040	2026	3,773

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000000519	ROOF	D3040	2026	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-8	0000000528	ROOF	D3040	2026	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000000516	ROOF	D3040	2026	3,773
1030	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-9	0000000532	ROOF	D3040	2026	3,773
1030	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000000518	ROOF	D3040	2026	6,899
							TOTAL	**$13,345,641**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
9	1030ES01	EXTERIOR WALL FINISH RENEWAL	3	$8,050
10	1030SI01	SITE PEDESTRIAN PAVING RENEWAL	3	$6,196
		TOTAL FOR CORRECTIVE ACTION		**$14,245**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1030FS01	ELIMINATE FIRE RATING COMPROMISES	1	$7,273
2	1030AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	1	$26,721
3	1030FS03	ADD EXIT SIGNS	2	$950
4	1030FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$105,009
5	1030HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	2	$260,433
6	1030AC03	INTERIOR DOOR ACCESSIBILITY UPGRADES	2	$5,975
7	1030AC04	INTERIOR STAIR UPGRADES	2	$7,655
8	1030AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$26,286
		TOTAL FOR PLANT ADAPTION		**$440,302**
		GRAND TOTAL:		**$454,548**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	1030AC01	1	Plant Adaption	BUILDING ENTRY ACCESSIBILITY UPGRADES	$26,721
6	1030AC03	2	Plant Adaption	INTERIOR DOOR ACCESSIBILITY UPGRADES	$5,975
7	1030AC04	2	Plant Adaption	INTERIOR STAIR UPGRADES	$7,655
8	1030AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$26,286
				TOTAL FOR ACCESSIBILITY	**$66,637**
9	1030ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$8,050
				TOTAL FOR EXTERIOR	**$8,050**
1	1030FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$7,273
3	1030FS03	2	Plant Adaption	ADD EXIT SIGNS	$950
4	1030FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$105,009
				TOTAL FOR FIRE/LIFE SAFETY	**$113,232**
5	1030HE01	2	Plant Adaption	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	$260,433
				TOTAL FOR HEALTH	**$260,433**
10	1030SI01	3	Corrective Action	SITE PEDESTRIAN PAVING RENEWAL	$6,196
				TOTAL FOR SITE	**$6,196**
				GRAND TOTAL:	**$454,548**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	1030FS01	**Category Code:**	FS5C
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	9/25/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Room Only: Floor(s) P

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include electrical and mechanical spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	LOT	1	$1,200	$1,200	$4,000	$4,000	$5,200
Base Material/Labor Costs				**$1,200**		**$4,000**	
Indexed Material/Labor Costs				**$1,193**		**$4,032**	**$5,225**
Construction Mark Up at 20.0%							**$1,045**
Original Construction Cost							**$6,270**
Date of Original Estimate: 9/25/2018						**Inflation**	**$0**
Current Year Construction Cost							**$6,270**
Professional Fees at 16.0%							**$1,003**
TOTAL PROJECT COST							**$7,273**

All costs shown as Present Value

BUILDING ENTRY ACCESSIBILITY UPGRADES

Project Number:	1030AC01
Priority Sequence:	2
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	9/25/2018

Category Code: AC2A

System:	ACCESSIBILITY
Component:	BUILDING ENTRY
Element:	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 505	Not Applicable	Undefined: Floor(s) 1

Description

Accessibility legislation requires that building entrances have certain accessible features. To comply with the intent of this legislation, it is recommended that compliant handrails be installed at the exterior ramps at the loading dock and at the west and south exterior walkways where they are missing. Additionally, legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Stairs with rectangular tube handrails do not meet current grip profile standards and should be replaced. Handrails with a compliant profile should be installed where missing.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	150	$64.33	$9,650	$45.09	$6,764	$16,413
Wall-mounted handrail system per floor	FLR	2	$729	$1,459	$663	$1,326	$2,785
			Base Material/Labor Costs	**$11,108**		**$8,090**	
			Indexed Material/Labor Costs	**$11,042**		**$8,155**	**$19,196**
					Construction Mark Up at 20.0%		**$3,839**
					Original Construction Cost		**$23,036**
Date of Original Estimate:	9/25/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$23,036**
					Professional Fees at 16.0%		**$3,686**
					TOTAL PROJECT COST		**$26,721**

All costs shown as Present Value

ADD EXIT SIGNS

Project Number:	1030FS03	**Category Code:** FS1A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	12/6/2018	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Energy Conservation	Room Only: Floor(s) 2
IBC	1003.2.10		

Description

The Administrative suite on the second floor should have exit signs added in room 223 C to mark the exit pathways. LED exit signs are recommended for their low maintenance and energy-efficient features. New exit signs should be connected an available emergency circuit.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new LED exit signs, including all connections	EA	2	$118	$236	$222	$444	$680
			Base Material/Labor Costs	**$236**		**$444**	
			Indexed Material/Labor Costs	**$235**		**$448**	**$682**
						Construction Mark Up at 20.0%	**$136**
						Original Construction Cost	**$819**
Date of Original Estimate: 12/6/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$819**
						Professional Fees at 16.0%	**$131**
						TOTAL PROJECT COST	**$950**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1030FS02	**Category Code:** FS6A	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/25/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	95	$304	$28,880	$488	$46,360	$75,240
			Base Material/Labor Costs	**$28,880**		**$46,360**	
			Indexed Material/Labor Costs	**$28,707**		**$46,731**	**$75,438**
					Construction Mark Up at 20.0%		**$15,088**
					Original Construction Cost		**$90,525**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$90,525**
					Professional Fees at 16.0%		**$14,484**
					TOTAL PROJECT COST		**$105,009**

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	1030HE01	**Category Code:** HE6B	
Priority Sequence:	5		
Priority Class:	Critical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	11/29/2018	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1,2,P
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There may be asbestos existent on utility piping. Prior to future renovation of these systems, this asbestos if present will have to be properly removed from the utility networks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from utility piping	SF	92,021	$0.23	$21,165	$0.58	$53,372	$74,537
Plumbing system - abate asbestos from supply piping network	SF	138,032	$0.23	$31,747	$0.58	$80,059	$111,806
Base Material/Labor Costs				**$52,912**		**$133,431**	
Indexed Material/Labor Costs				**$52,595**		**$134,498**	**$187,093**
Construction Mark Up at 20.0%							**$37,419**
Original Construction Cost							**$224,511**
Date of Original Estimate: 11/29/2018						**Inflation**	**$0**
Current Year Construction Cost							**$224,511**
Professional Fees at 16.0%							**$35,922**
TOTAL PROJECT COST							**$260,433**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	1030AC03	**Category Code:** AC3C	
Priority Sequence:	6		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/25/2018	**Element:**	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4, 703.1	Not Applicable	Floor-wide: Floor(s) 1,2,P

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs. Current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all non-compliant signage be upgraded to conform to appropriate accessibility standards. This scope includes directional signage.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant commercial-grade door hardware	EA	6	$387	$2,322	$155	$930	$3,252
ADA compliant room signage	EA	12	$67.64	$812	$19.89	$239	$1,050
Base Material/Labor Costs				**$3,133**		**$1,169**	
Indexed Material/Labor Costs				**$3,114**		**$1,178**	**$4,292**
Construction Mark Up at 20.0%							**$858**
Original Construction Cost							**$5,151**
Date of Original Estimate: 9/25/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,151**
Professional Fees at 16.0%							**$824**
TOTAL PROJECT COST							**$5,975**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	1030AC04	**Category Code:** AC3B	
Priority Sequence:	7		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/25/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1014.9	Not Applicable	Floor-wide: Floor(s) 1,2
ADAAG	505		

Description

Stairways shall have intermediate handrails located in such a manner that all portions of the stairway minimum width or required capacity are within 30 inches of a handrail. It is recommended that the open common area stairways have intermediate handrails installed as currently required. Stairs with rectangular tube handrails do not meet current grip profile standards and should be replaced. Handrails with a compliant profile should be installed where missing. The stair from the kitchen area to the ground floor is missing the required handrails, as are several sets of steps in the ground floor mechanical area. Steps to the stage in the dining area are missing one required handrail. Install compliant handrail systems at all noncompliant interior stair locations.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	2	$729	$1,459	$663	$1,326	$2,785
Switchback handrail/guardrail system per floor	FLR	1	$1,653	$1,653	$1,061	$1,061	$2,714
Base Material/Labor Costs				**$3,112**		**$2,387**	
Indexed Material/Labor Costs				**$3,093**		**$2,406**	**$5,499**
Construction Mark Up at 20.0%							**$1,100**
Original Construction Cost							**$6,599**
Date of Original Estimate: 9/25/2018						**Inflation**	**$0**
Current Year Construction Cost							**$6,599**
Professional Fees at 16.0%							**$1,056**
TOTAL PROJECT COST							**$7,655**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1030AC02	**Category Code:** AC3F	
Priority Sequence:	8		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/25/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,2,P

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the drinking fountains is a barrier to accessibility. All single-level drinking fountains should be replaced with dual-level, refrigerated units. Additionally, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Drinking fountains which do not meet this requirement should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	3	$1,549	$4,647	$476	$1,428	$6,076
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	3	$932	$2,797	$3,321	$9,964	$12,761
			Base Material/Labor Costs	**$7,444**		**$11,393**	
			Indexed Material/Labor Costs	**$7,400**		**$11,484**	**$18,884**
					Construction Mark Up at 20.0%		**$3,777**
					Original Construction Cost		**$22,660**
Date of Original Estimate: 9/25/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$22,660**
					Professional Fees at 16.0%		**$3,626**
					TOTAL PROJECT COST		**$26,286**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	1030ES01	**Category Code:** ES2B	
Priority Sequence:	9		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	12/6/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The exterior wall systems include wood plank finishes. The wood appears to be in generally good condition but should be repainted within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	2,240	$0.64	$1,434	$1.93	$4,323	$5,757
			Base Material/Labor Costs	**$1,434**		**$4,323**	
			Indexed Material/Labor Costs	**$1,425**		**$4,358**	**$5,783**
						Construction Mark Up at 20.0%	**$1,157**
						Original Construction Cost	**$6,939**
Date of Original Estimate: 12/6/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$6,939**
						Professional Fees at 16.0%	**$1,110**
						TOTAL PROJECT COST	**$8,050**

All costs shown as Present Value

SITE PEDESTRIAN PAVING RENEWAL

Project Number:	1030SI01	**Category Code:** SI1A	
Priority Sequence:	10		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	9/25/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Undefined: Floor(s) 1

Description

The building is surrounded by concrete walkways, most of which are in good condition. Some areas of cracked concrete were observed and it is recommended that these areas be replaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian concrete walkways	SF	500	$4.23	$2,115	$4.66	$2,330	$4,445
Base Material/Labor Costs				**$2,115**		**$2,330**	
Indexed Material/Labor Costs				**$2,102**		**$2,349**	**$4,451**
Construction Mark Up at 20.0%							**$890**
Original Construction Cost							**$5,341**
Date of Original Estimate: 9/25/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,341**
Professional Fees at 16.0%							**$855**
TOTAL PROJECT COST							**$6,196**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				2,240	SF	1.00	$27,515	2014	30		2044
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				1,120	SF	1.00	$2,303	1972	30	15	DR
EW15	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - PAINT	PENTHOUSE			4,490	SF	1.00	$6,494	1972	50		2022
WN05	GLASS, STOREFRONT				1,980	SF	1.00	$249,596	2014	40		2054
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				1,980	SF	1.00	$433,498	1972	40	5	DR
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			50	LEAF	1.00	$151,112	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			16	LEAF	1.00	$32,105	1972	40	5	DR
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			13	EA	1.00	$88,014	2014	20	25	2059
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			15	EA	1.00	$101,555	2014	20		2034
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				16	EA	1.00	$15,143	1972	12	33	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				50	EA	1.00	$59,351	2014	12		2026
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	MAIN ROOF			130,000	SF	1.00	$2,717,971	1990	30		2020
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	ATRIUM ROOF			1,200	SF	1.00	$25,089	1972	30	15	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	LIGHT MONITOR			1,700	SF	1.00	$29,047	2014	40		2054
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	MAIN ROOF			100	LF	1.00	$1,909	2014	20		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL	ATRIUM ROOF			2,200	SF	1.00	$132,628	2014	20		2034
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	MAIN ROOF			2,400	SF	1.00	$686,816	2014	35		2049
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			300	LEAF	1.00	$663,432	2014	60		2074
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			1	LEAF	1.00	$2,211	1972	60		2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			100	LEAF	1.00	$366,853	1972	60		2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			20	LEAF	1.00	$73,371	1972	60		2032
DR03	DOOR - OVERHEAD, INTERIOR	GLASS SECTIONAL		221	70	SF	1.00	$7,293	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	COILING DOOR		202B	12	SF	1.00	$1,250	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	MEETING RMS		263B	180	SF	1.00	$18,754	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	COILING GRILLES		255	360	SF	1.00	$37,509	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	COILING GRILLES		255	200	SF	1.00	$20,838	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	COILING GRILLES		255	60	SF	1.00	$6,251	2014	45		2059
DR03	DOOR - OVERHEAD, INTERIOR	COILING DOOR		C2-17	120	SF	1.00	$12,503	2014	45		2059
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIGINAL DR			1	EA	1.00	$753	1972	35	10	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			100	EA	1.00	$75,290	2014	35		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			294	EA	1.00	$221,352	2014	35		2049
DR26	DOOR PANIC HARDWARE, INTERIOR	RATED DRS			20	EA	1.00	$23,739	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				320	LF	1.00	$179,482	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				206,100	SF	1.00	$575,226	1972	12	33	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	ORIGINAL			19,240	SF	1.00	$779,251	1972	60		2032
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	2010 INSTALL			5,500	SF	1.00	$222,759	2010	60		2070
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	2014 INSTALL			2,750	SF	1.00	$111,379	2014	60		2074
IW09	WALL FINISH - WALL COVERING, ROLL	FRP			13,740	SF	1.00	$78,338	1972	20	25	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				34,970	SF	1.00	$416,609	2014	12		2026
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				27,970	SF	1.00	$192,493	2014	20		2034
IF04	FLOORING - VINYL SHEET, STANDARD				20,980	SF	1.00	$236,509	2014	15		2029
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			7,830	SF	1.00	$276,138	1972	40	5	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	2014 INSTALL			2,240	SF	1.00	$78,997	2014	40		2054
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	2017 INSTALL			1,120	SF	1.00	$39,499	2017	40		2057
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				44,760	SF	1.00	$156,553	1972	10	35	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2011 INSTALL			50,060	SF	1.00	$557,177	2011	45		2056
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2014 INSTALL			14,720	SF	1.00	$163,836	2014	45		2059
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	WOOD SLATS			5,150	SF	1.00	$69,563	2014	45		2059
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	PERFORATED WOOD			3,680	SF	1.00	$49,707	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				18,400	SF	1.00	$51,355	2014	24		2038
VT01	ELEVATOR MODERNIZATION - TRACTION - LOW RISE 2-8 FLOORS	KONE		M1-1	1	EA	1.00	$368,695	2013	25		2038
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MCE	0000004414	M1-4	1	EA	1.00	$257,984	2000	25		2025
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	1.00	$2,694	2014	25		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2000 INSTALL			14	EA	1.00	$18,916	2000	35		2035
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2014 INSTALL			12	EA	1.00	$16,214	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN			BREAK AREAS	7	EA	1.00	$5,408	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	2014 INSTALL			3	EA	1.00	$4,993	2014	50		2064
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			2	EA	1.00	$3,329	1972	50		2022
FX10	PLUMBING FIXTURE - URINAL	2000 INSTALL			10	EA	1.00	$10,787	2000	35		2035
FX10	PLUMBING FIXTURE - URINAL	2014 INSTALL			11	EA	1.00	$11,865	2014	35		2049

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	2000 INSTALL			18	EA	1.00	$30,509	2000	35		2035
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	2014 INSTALL			14	EA	1.00	$23,730	2014	35		2049
BF02	BACKFLOW PREVENTER (1-2 INCHES)	WILKENS	0000000901	M1-3	1	EA	1.25	$2,793	2012	20		2032
PS21	SUPPLY PIPING SYSTEM - STUDENT UNION	ORIGINAL			138,032	SF	1.00	$1,558,110	1972	50		2022
PS21	SUPPLY PIPING SYSTEM - STUDENT UNION	2002 UPGRADE			46,010	SF	1.00	$519,363	2002	50		2052
WH23	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	0000001343	112A	40	GAL	1.00	$1,823	2000	15	2	DR
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		247G	1	EA	1.00	$990	2010	10		2020
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		214E	1	EA	1.00	$990	2016	10		2026
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		201C	1	EA	1.00	$990	2016	10		2026
PD21	DRAIN PIPING SYSTEM - STUDENT UNION	ORIGINAL			138,032	SF	1.00	$2,335,473	1972	60		2032
PD21	DRAIN PIPING SYSTEM - STUDENT UNION	2002 UPGRADE			46,010	SF	1.00	$778,480	2002	60		2062
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	QUINCY	0000000892	M1-3	5	HP	0.85	$9,701	2005	25		2030
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	QUINCY	0000000893	M1-3	5	HP	0.85	$9,701	2005	25		2030
CH08	CHILLER - AIR COOLED PACKAGE (35-75 TONS)	TRANE	0000000534	ROOF	60	TON	1.00	$113,141	2010	30		2040
CH08	CHILLER - AIR COOLED PACKAGE (35-75 TONS)	CH-3	0000000530	ROOF	70	TON	1.00	$131,998	2004	30		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	TRANE	0000005719	ROOF	150	TON	1.00	$189,360	2013	30		2043
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	SANYO	0000000927	SITE	3	TON	0.50	$3,435	2000	25		2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	EMERSON	0000006502	SITE	1	TON	1.10	$2,519	2010	25		2035
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005723	ROOF	1	TON	1.10	$2,519	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005724	ROOF	1	TON	1.10	$2,519	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005729	ROOF	1	TON	1.10	$2,519	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	KARPAK	0000000529	ROOF	10	TON	1.00	$22,898	2000	25		2025
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000004646	ROOF	3	TON	0.50	$3,435	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	0000005714	ROOF	1	TON	1.00	$2,290	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005730	ROOF	1	TON	1.10	$2,519	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005727	ROOF	1	TON	1.10	$2,519	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000006697	ROOF	1	TON	0.50	$1,145	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000006689	ROOF	1	TON	1.10	$2,519	2016	25		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000004644	ROOF	2	TON	0.50	$2,290	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	IDF-4	0000004645	ROOF	3	TON	0.50	$3,435	2013	25		2038

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000009317	M1-1	1	TON	0.50	$1,485	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FCU-07	0000019509	E2-2	1	TON	0.50	$1,485	2015	30		2045
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006825	IDF4-1	1	TON	1.10	$3,267	2010	30		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006832	IDF2-2	1	TON	1.10	$3,267	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000007592	E2-1	1	TON	1.10	$3,267	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006831	IDF2-3	1	TON	1.10	$3,267	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000005685	IDF1-1	1	TON	1.10	$3,267	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI		IDF1-5	1	TON	1.10	$3,267	2013	30		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006820	IDF2-01	1	TON	1.10	$3,267	2013	30		2043
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	SANYO	0000006709	M1-4	3	TON	0.50	$2,806	2000	30		2030
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI ELECTRIC	0000006822	219K	3	TON	0.50	$2,806	2013	30		2043
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI ELECTRIC	0000006822	219K	2	TON	0.50	$1,870	2013	30		2043
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI ELECTRIC	0000006822	219K	3	TON	0.50	$2,806	2013	30		2043
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	MZU-6	0000001352	110B	2	HP	1.00	$19,228	1972	35	10	DR
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	MZU-7	0000001348	M1-02	2	HP	1.00	$19,228	1972	35	10	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	MZU-8	0000000917	M1-5	5	HP	1.00	$41,957	1972	35	10	DR
AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	SF-10	0000000921	M1-5	20	HP	1.00	$122,893	1972	35	10	DR
AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-11	0000000919	M1-5	30	HP	1.00	$175,314	1972	35	10	DR
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	SF-9	0000000902	M1-3	40	HP	1.00	$221,108	1972	35	10	DR
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-4	0000005710	ROOF	20	HP	1.00	$304,771	2013	25		2038
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-7	0000005937	ROOF	20	HP	1.00	$304,771	2016	25		2041
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-3	0000005716	ROOF	20	HP	1.00	$304,771	2013	25		2038
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-2	0000005728	ROOF	20	HP	1.00	$304,771	2013	25		2038
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-1	0000005725	ROOF	20	HP	1.00	$304,771	2013	25		2038
AH25	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (140-208 MBH INPUT)	MAU 1.1	0000000499	ROOF	150	MBH	1.00	$12,241	1999	25		2024
AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-4	0000000524	ROOF	400	MBH	1.00	$23,589	2017	25		2042
AH27	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-3	0000000521	ROOF	300	MBH	1.00	$17,692	2001	25		2026
AH28	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (413-525 MBH INPUT)	MAU-2	0000005939	ROOF	500	MBH	1.00	$25,468	2017	25		2042
FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	EF-20		M1-5	7	HP	1.07	$14,212	1972	35	10	DR
FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	EF-22		M1-5	7	HP	1.07	$14,212	1972	35	10	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-0	0000005938	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000000526	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	0000000522	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-9	0000000532	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-14	0000000500	ROOF	1	EA	1.00	$3,773	1999	25		2024
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000000496	ROOF	1	EA	1.00	$3,773	1993	25		2018
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000005643	ROOF	1	EA	1.00	$3,773	2014	25		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		0000000515	ROOF	1	EA	1.00	$3,773	1993	25		2018
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000000520	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000000519	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-8	0000000528	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-12	0000005936	ROOF	1	EA	1.00	$3,773	2014	25		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-13	0000000507	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000000516	ROOF	1	EA	1.00	$3,773	2001	25		2026
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000000518	ROOF	1	EA	1.00	$6,899	2001	25		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)			112A	1	HP	1.00	$1,321	1972	35	10	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-16	0000000543	PENTHOUSE	1	HP	1.00	$5,466	1972	40	5	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-18	0000000545	PENTHOUSE	1	HP	1.00	$5,466	1972	40	5	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000558	PENTHOUSE	1	HP	1.00	$5,466	1972	40	5	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000559	PENTHOUSE	1	HP	1.00	$5,466	1972	40	5	DR
FN35	FAN - UTILITY SET, 1/4" SP (12-17 HP)	EF-15	0000000906	M1-3	15	HP	1.00	$23,457	1972	40	5	DR
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001368	251	5	LF	1.00	$5,257	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001370	254	5	LF	1.00	$5,257	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001376	257	5	LF	1.00	$5,257	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001371	253C	4	LF	1.00	$4,206	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001373	256	4	LF	1.00	$4,206	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001377	257	4	LF	1.00	$4,206	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001374	257	6	LF	1.00	$6,309	2002	30		2032
HD02	HOOD, KITCHEN, COMMERCIAL WITH FIRE SUPPRESSION		0000001378	259	20	LF	1.00	$21,029	2002	30		2032
HV21	HVAC DISTRIBUTION NETWORKS - STUDENT UNION	ORIGINAL			92,021	SF	1.00	$3,073,175	1972	45		DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HV21	HVAC DISTRIBUTION NETWORKS - STUDENT UNION	2013 UPGRADE			92,021	SF	1.00	$3,073,175	2013	45		2058
PH01	PUMP - ELECTRIC (<=10 HP)	P-2	0000005711	PENTHOUSE	5	HP	1.00	$8,463	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	P-1	0000005718	PENTHOUSE	5	HP	1.00	$8,463	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	P-3		PENTHOUSE	5	HP	1.00	$8,463	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	CP-33	0000000926	M1-5	1	HP	1.00	$1,693	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)		0000000922	M1-5	1	HP	1.00	$1,693	1972	30	15	DR
PH01	PUMP - ELECTRIC (<=10 HP)	CP-7	0000000898	M1-3	7	HP	1.00	$11,848	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	CP-8	0000000899	M1-3	7	HP	1.00	$11,848	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000005745	M1-3	7	HP	1.00	$11,848	2015	30		2045
PH06	PUMP - ELECTRIC (30 - 40 HP)	CWP-1	0000005717	PENTHOUSE	40	HP	1.00	$41,494	2013	35		2048
PH06	PUMP - ELECTRIC (30 - 40 HP)	CWP-2	0000005715	PENTHOUSE	40	HP	1.00	$41,494	2013	35		2048
TK21	EXPANSION TANK, STL PT (20-26 GAL)		0000009320	PENTHOUSE	25	GAL	1.00	$1,713	2013	30		2043
AH37	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	CRAC-1	0000004656	219D	15	TON	1.00	$85,652	2012	18		2030
AH37	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	CRAC-2	0000004655	219D	15	TON	1.00	$85,652	2012	18		2030
AH37	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	CRAC-3		219D	15	TON	1.00	$85,652	2002	18		2020

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH37	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	AC#1	0000009146	112A	15	TON	1.00	$85,652	2015	18		2033
AH37	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	AC#2	0000009147	112A	15	TON	1.00	$85,652	2015	18		2033
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU#1	0000005712	ROOF	1	TON	1.00	$4,241	2013	25		2038
BA21	HVAC CONTROLS - TERMINAL ASSEMBLIES - STUDENT UNION				184,042	SF	1.00	$580,089	2013	20		2033
BA44	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - STUDENT UNION				184,042	SF	1.00	$162,658	2013	10		2023
BA67	HVAC CONTROLS - MAJOR INSTRUMENTATION - STUDENT UNION				184,042	SF	1.00	$84,040	2013	10		2023
FS01	FIRE SPRINKLER SYSTEM - WET				184,042	SF	1.00	$2,489,838	1972	80		2052
FA01	FIRE ALARM SYSTEM - DEVICES				184,042	SF	1.00	$791,018	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		TUNNEL	1	EA	1.00	$13,857	2014	18		2032
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		219H	1	EA	1.00	$13,857	2010	18		2028
FS04	FM200 OR INERGEN FIRE SUPPRESSION	219K			3,600	CF	1.00	$22,976	2013	30		2043
SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION	ORIGINAL			17,021	SF	1.00	$398,324	1972	50		2022
SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION	1994 UPGRADE			17,021	SF	1.00	$398,324	1994	50		2044
SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION	2002 UPGRADE			75,000	SF	1.00	$1,755,145	2002	50		2052
SE21	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION	2014 UPGRADE			75,000	SF	1.00	$1,755,145	2014	50		2064

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	CC-4MDS	0000000930	SITE	1,200	AMP	1.00	$89,981	2004	40		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	CC-2MDS	0000000931	SITE	1,200	AMP	1.00	$89,981	2004	40		2044
SG07	MAIN SWITCHBOARD W/BREAKERS (>2500 AMP)		0000009223	SITE	3,000	AMP	1.00	$258,689	2014	40		2054
SG07	MAIN SWITCHBOARD W/BREAKERS (>2500 AMP)	CC-4MDP	0000009222	SITE	3,000	AMP	1.00	$258,689	2014	40		2054
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-1 RF-1		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-1 RF-2		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-2 RF-1		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-2 RF-2		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-3 RF-1		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-3 RF-2		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-4 RF-1		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-4 RF-2		ROOF	5	HP	1.00	$3,633	2013	15		2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-7 RF-1		ROOF	5	HP	1.00	$3,633	2016	15		2031
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-7 RF-2		ROOF	5	HP	1.00	$3,633	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-1 SF-1		ROOF	10	HP	1.00	$5,554	2013	15		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-1 SF-2		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-2 SF-1		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-2 SF-2		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-3 SF-1		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-3 SF-2		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CP-7	0000005741	M1-3	7	HP	1.07	$4,160	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CP-8	0000005742	M1-3	7	HP	1.07	$4,160	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-4 SF-1		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-4 SF-2		ROOF	10	HP	1.00	$5,554	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-7 SF-1		ROOF	10	HP	1.00	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	AHU-7 SF-2		ROOF	10	HP	1.00	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	EF-20		M1-5	7	HP	1.07	$4,160	2013	15		2028
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	EF-22	0000005704	M1-5	7	HP	1.07	$4,160	2013	15		2028
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SPARE	0000005720	PENTHOUSE	20	HP	1.00	$7,904	2013	16		2029
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	EF-15	0000005744	M1-3	15	HP	1.00	$5,928	2015	16		2031

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	SF-10	0000005748	M1-5	20	HP	1.00	$7,904	1972	16	29	DR
VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	SF-11	0000005747	M1-5	30	HP	1.00	$10,846	2017	17		2034
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	CWP-1	0000005733	PENTHOUSE	40	HP	1.00	$12,316	2013	18		2031
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	CWP-2	0000005732	PENTHOUSE	40	HP	1.00	$12,316	2013	18		2031
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	T8 EAVE-MOUNT			32	EA	1.00	$16,274	2010	20		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	T8 EAVE-MOUNT			9	EA	1.00	$4,577	2016	20		2036
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			4	EA	1.00	$2,034	2016	20		2036
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED			6	EA	1.00	$3,051	1995	20	2	DR
LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	ORIGINAL			34,042	SF	1.00	$402,198	1972	20	25	DR
LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	2004 INSTALL			75,000	SF	1.00	$886,107	2004	20		2024
LI21	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	2014 INSTALL			75,000	SF	1.00	$886,107	2014	20		2034
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				75,000	SF	1.00	$172,241	2013	20		2033
GN04	GENERATOR - DIESEL (200-500 KW)	EPSS-3	0000001281	SITE	500	KW	1.00	$232,384	2012	25		2037
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	GE ZENITH	0000000936	E1-1	100	AMP	1.00	$5,527	2004	25		2029
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	GE ZENITH	0000000933	E1-1	400	AMP	1.00	$15,881	2004	25		2029

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-DC	0000004093	E1-2	400	AMP	1.00	$15,881	2014	25		2039
GN15	SWITCH - AUTO TRANSFER, 480 V (100-400 AMP)	ATS-MECH	0000004094	E1-2	400	AMP	1.00	$15,881	2014	25		2039
TK49	FUEL TANK, ABOVE GROUND (<1,250 GAL)	STEEL TANK	0000006223	SITE	1,000	GAL	1.00	$62,165	2012	35		2047
UP03	UNINTERRUPTIBLE POWER SUPPLY (5-40 KVA)	DC-UPS		219K	15	KVA	1.00	$29,876	2013	20		2033
UP03	UNINTERRUPTIBLE POWER SUPPLY (5-40 KVA)	MDF-UPC		MDF	15	KVA	1.00	$29,876	2015	20		2035
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#7		118	200	SF	1.00	$69,140	2002	35		2037
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#6		118	120	SF	1.00	$41,484	2002	35		2037
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#1		259	112	SF	1.00	$38,719	2002	35		2037
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#2		259	112	SF	1.00	$38,719	2002	35		2037
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#3		259	112	SF	1.00	$38,719	2002	35		2037
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#4		259	96	SF	1.00	$33,187	2002	35		2037
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	#5		259	96	SF	1.00	$33,187	2002	35		2037
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#7		118	1	EA	1.00	$9,776	2002	15		DR
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#6		118	1	EA	1.00	$9,776	2015	15		2030
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#1		259	1	EA	1.00	$9,776	2002	15		DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#2		259	1	EA	1.00	$9,776	2015	15		2030
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#3		259	1	EA	1.00	$9,776	2002	15		DR
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#4		259	1	EA	1.00	$9,776	2002	15		DR
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#5		259	1	EA	1.00	$9,776	2002	15		DR
CK01	COMMERCIAL KITCHEN EQUIPMENT ESTIMATE BY SQUARE FOOT				7,600	SF	0.20	$1,344,659	2010	20	11	2041
							Grand Total:	**$39,962,729**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		1,120	SF	$2,303	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM		1,980	SF	$433,498	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	16	LEAF	$32,105	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		16	EA	$15,143	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	ATRIUM ROOF	1,200	SF	$25,089	DR
C1020	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	ORIGINAL DR	1	EA	$753	DR
C3010	WALL FINISH - APPLIED, STANDARD		206,100	SF	$575,226	DR
C3010	WALL FINISH - WALL COVERING, ROLL	FRP	13,740	SF	$78,338	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL	7,830	SF	$276,138	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		44,760	SF	$156,553	DR
D2020	WATER HEATER - RESIDENTIAL, ELECTRIC (25-46 GAL)	BRADFORD WHITE	40	GAL	$1,823	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	EF-20	7	HP	$14,212	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	EF-22	7	HP	$14,212	DR
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)		1	HP	$1,321	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-16	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-18	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		1	HP	$5,466	DR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - UTILITY SET, 1/4" SP (12-17 HP)	EF-15	15	HP	$23,457	DR
D3040	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	MZU-6	2	HP	$19,228	DR
D3040	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	MZU-7	2	HP	$19,228	DR
D3040	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-11	30	HP	$175,314	DR
D3040	AIR HANDLING UNIT - INDOOR (17-23 HP)	SF-10	20	HP	$122,893	DR
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	MZU-8	5	HP	$41,957	DR
D3040	AIR HANDLING UNIT - INDOOR (35-45 HP)	SF-9	40	HP	$221,108	DR
D3040	HVAC DISTRIBUTION NETWORKS - STUDENT UNION	ORIGINAL	92,021	SF	$3,073,175	DR
D3040	PUMP - ELECTRIC (<=10 HP)		1	HP	$1,693	DR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	SF-10	20	HP	$7,904	DR
D5020	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	ORIGINAL	34,042	SF	$402,198	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED	6	EA	$3,051	DR
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#7	1	EA	$9,776	DR
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#1	1	EA	$9,776	DR
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#3	1	EA	$9,776	DR
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#4	1	EA	$9,776	DR
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	#5	1	EA	$9,776	DR
		TOTAL DEFERRED RENEWAL COST			**$5,808,664**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2018

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		1	EA	$3,773	2018
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)		1	EA	$3,773	2018
	2018	PROJECTED COMPONENT REPLACEMENT COST			$7,546	

No Projected Component Replacement Cost for Asset No. 1030 for 2019

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	MAIN ROOF	130,000	SF	$2,883,495	2020
D3050	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (10-20 TON)	CRAC-3	15	TON	$90,868	2020
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX	1	EA	$1,050	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$2,975,414	

No Projected Component Replacement Cost for Asset No. 1030 for 2021

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - PAINT	PENTHOUSE	4,490	SF	$7,309	2022
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL	2	EA	$3,746	2022
D5010	ELECTRICAL DISTRIBUTION NETWORK - STUDENT UNION	ORIGINAL	17,021	SF	$448,317	2022
D4030	FIRE ALARM SYSTEM - DEVICES		184,042	SF	$890,298	2022
D2020	SUPPLY PIPING SYSTEM - STUDENT UNION	ORIGINAL	138,032	SF	$1,753,667	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$3,103,338**	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - STUDENT UNION		184,042	SF	$97,425	2023
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - STUDENT UNION		184,042	SF	$188,566	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$285,991**	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - STUDENT UNION	2004 INSTALL	75,000	SF	$1,058,058	2024
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (140-208 MBH INPUT)	MAU 1.1	150	MBH	$14,617	2024
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-14	1	EA	$4,505	2024
D3040	PUMP - ELECTRIC (<=10 HP)	CP-33	1	HP	$2,021	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,079,201**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	SANYO	3	TON	$4,224	2025
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	KARPAK	10	TON	$28,162	2025
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MCE	1	EA	$317,287	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$349,673	

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		34,970	SF	$527,748	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		50	EA	$75,184	2026
D3040	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (263-413 MBH INPUT)	MAU-3	300	MBH	$22,412	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-0	1	EA	$4,779	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	1	EA	$8,740	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	1	EA	$4,779	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	1	EA	$4,779	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	1	EA	$4,779	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	1	EA	$4,779	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-8	1	EA	$4,779	2026

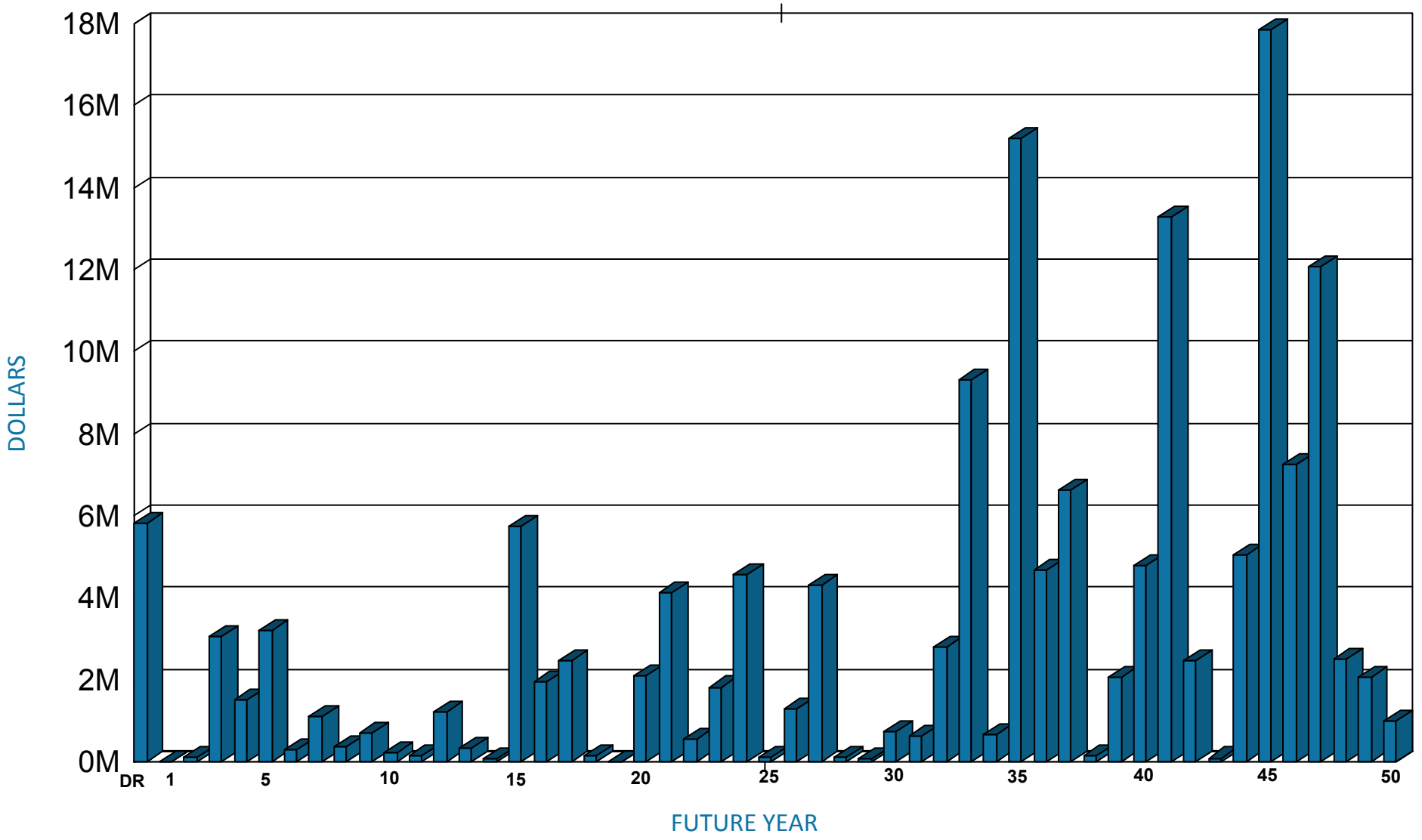
RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	1	EA	$4,779	2026
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-9	1	EA	$4,779	2026
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX	1	EA	$1,254	2026
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX	1	EA	$1,254	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$674,827**	

No Projected Component Replacement Cost for Asset No. 1030 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



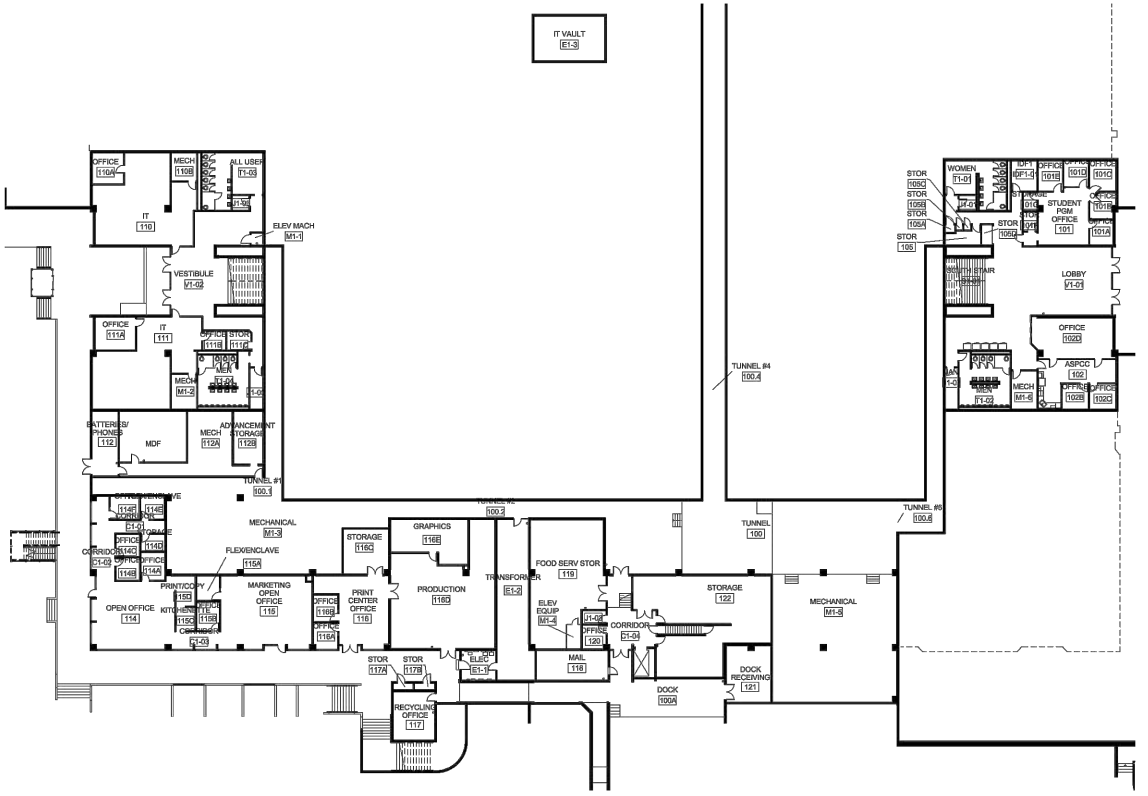
Average Annual Renewal Cost per SF $7.02

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



AC01 ES01 SI01

AC02 AC03 AC04 HE01

COLLEGE CENTER

BLDG NO. 1030

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/10/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

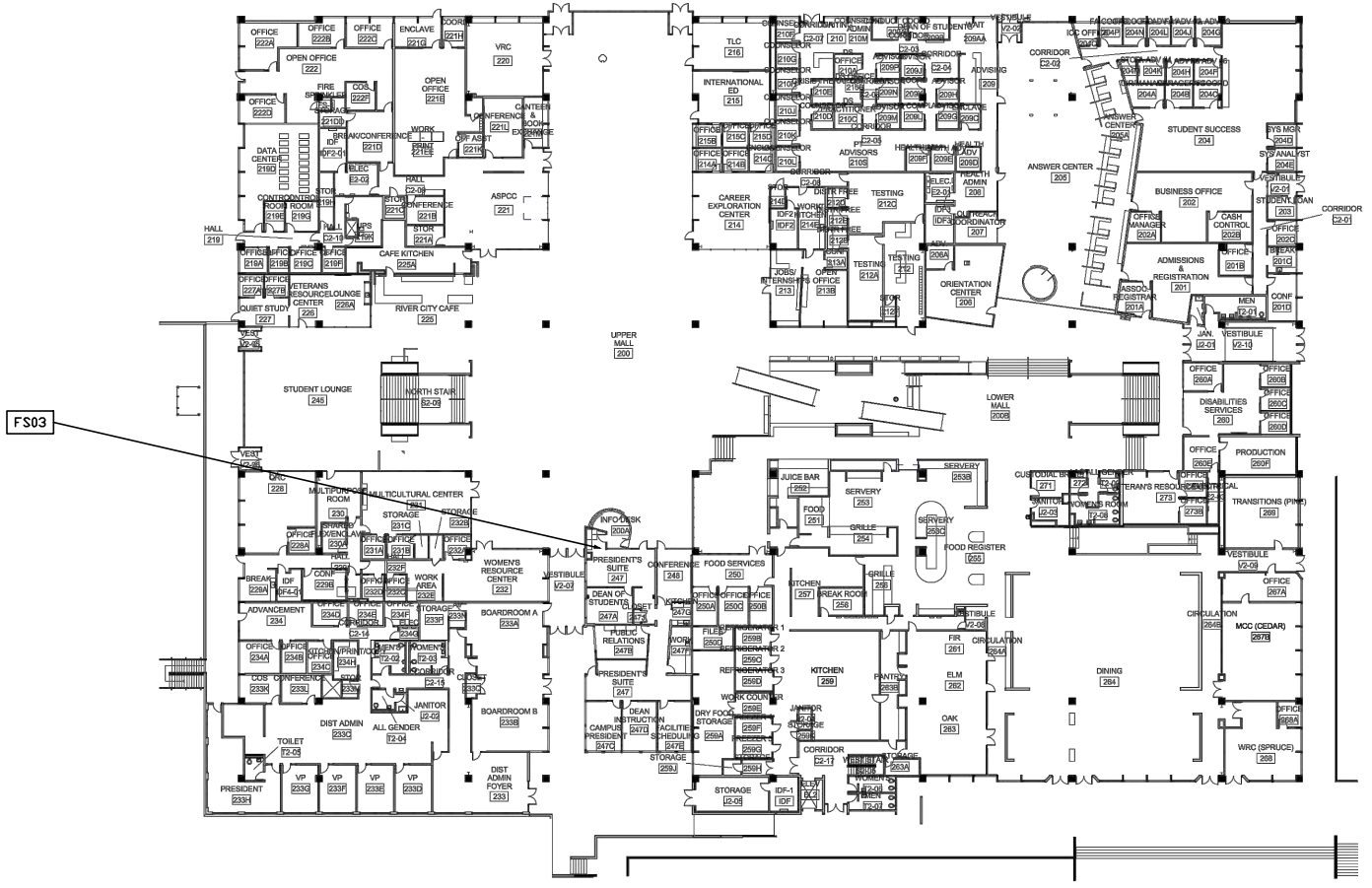
ROOF

FS02

PENTHOUSE FLOOR PLAN

AC02 AC03 HE01

FS01



AC02 AC03 AC04 HE01

COLLEGE CENTER

BLDG NO. 1030

PES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/10/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1030001a 8/22/2018
Accessible elevator control panel
Elevator

1030001e 8/22/2018
Exhaust fan
Penthouse

1030002a 8/22/2018
Roof membrane and edge without fall protection
Roof

1030002e 8/22/2018
Air-cooled chiller
Roof

1030003a 8/22/2018
Failing coating on the roof membrane
Roof

1030003e 8/22/2018
Condensing unit
Roof

1030004a 8/22/2018
Penthouse and roof-mounted equipment
Roof

1030004e 8/22/2018
Exhaust fan
Penthouse

1030005a 8/22/2018
Stairwell roof
Roof

1030005e 8/22/2018
Pump equipment
Penthouse

1030006a 8/22/2018
Penthouse door with noncompliant hardware
Roof

1030006e 8/22/2018
Variable frequency drive
Penthouse

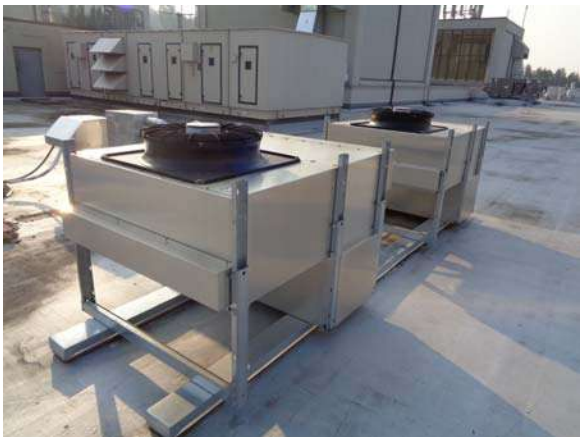
1030007a 8/22/2018
Penthouse door with noncompliant hardware
Roof

1030007e 8/22/2018
HVAC control panel
Penthouse

1030008a 8/22/2018
Roof drain downspout at the penthouse
Roof

1030008e 8/22/2018
Air handling unit
Roof

1030009a 8/22/2018
Light monitor
Roof



1030009e 8/22/2018
Condensing units
Roof

1030010a 8/22/2018

Clerestory windows at suite 247

Roof

1030010e 8/22/2018

Air handling unit

Roof

1030011a 8/22/2018

Skylight

Roof

1030011e 8/22/2018

Exhaust fan

Roof

1030012a 8/22/2018

Roof drain and patched roof membrane

Roof

1030012e 8/22/2018

Refrigeration equipment

Roof

1030013a 8/22/2018
Atrium roof structure
Roof

1030013e 8/22/2018
Exhaust fan
Roof

1030014a 8/22/2018
Gutter at the atrium roof
Roof

1030014e 8/22/2018
Makeup air unit
Roof

1030015a 8/22/2018
Atrium skylight
Roof

1030015e 8/22/2018
Exhaust fan
Roof

1030016a 8/22/2018
Roof membrane and tie-off point
Roof

1030016e 8/22/2018
Makeup air unit
Roof

1030017a 8/22/2018
Exterior walkway and elevator tower
North elevation

1030017e 8/22/2018
Air-cooled chiller
Roof

1030018a 8/22/2018
Elevator tower
North elevation

1030018e 8/22/2018
Ductwork
Penthouse

1030019a 8/22/2018

Common area open stair

Second floor

1030019e 8/22/2018

Pump equipment

Penthouse

1030020a 8/22/2018

Typical interior glazed wall

Room 226

1030020e 8/22/2018

Exhaust fan

Penthouse

1030021a 8/22/2018

Casework and accessible sink

Room 222

1030021e 8/22/2018

Air handling unit

Roof

1030022a 8/22/2018

Casework and area finishes

Room 221

1030022e 8/22/2018

Fire alarm panel

Second floor, room 219

1030023a 8/22/2018

Glass sectional overhead door

Suite 220

1030023e 8/22/2018

Computer room air conditioner

Second floor, room 219D

1030024a 8/22/2018

Exit door, hardware, and exit signage

Suite 220

1030024e 8/22/2018

Computer room air conditioner

Second floor, room 219D

1030025a 8/22/2018
Entrance doors, hardware, and signage
Common area

1030025e 8/22/2018
Interior lighting
Second floor, room 219D

1030026a 8/22/2018
Typical exterior wall system
Second floor

1030026e 8/22/2018
Fire alarm devices
Second floor, room 219D

1030027a 8/22/2018
Structure at the east common area atrium
Second floor

1030027e 8/22/2018
Fire suppression system
Second floor, room 219H

1030028a 8/22/2018

East atrium skylight

Second floor

1030028e 8/22/2018

Transformers

Second floor, room 219K

1030029a 8/22/2018

Casework with accessible sink

Room 215

1030029e 8/22/2018

Evaporators

Second floor, room 219K

1030030a 8/22/2018

Office area typical finishes

Second floor

1030030e 8/22/2018

UPS

Second floor, room 219K

1030031a 8/22/2018

Unfirestopped penetrations

Room E2-01

1030031e 8/22/2018

Interior lighting

Second floor, room 222

1030032a 8/22/2018

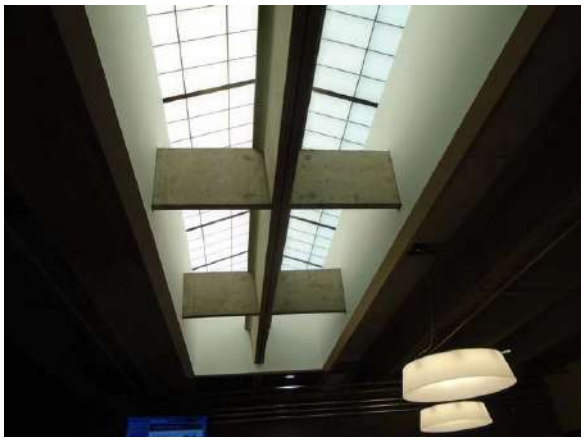
Unfirestopped penetrations

Room IDF2-03

1030032e 8/22/2018

Occupancy sensor

Second floor, room 222



1030033a 8/22/2018

Main atrium skylight structure

Second floor

1030033e 8/22/2018

Sink

Second floor, room 221D

1030034a 8/22/2018

Typical exterior wall system

Second floor

1030034e 8/22/2018

Evaporator

Second floor, room E2-02

1030035a 8/22/2018

Detail at the glazing system

Second floor

1030035e 8/22/2018

Occupancy sensor

Second floor, room 221G

1030036a 8/22/2018

Overhead coiling door

Room 202B

1030036e 8/22/2018

Interior lighting

Second floor, room 221K

1030037a 8/22/2018

Ramp with compliant handrails

South entrance

1030037e 8/22/2018

Interior lighting

Second floor, room 221A

1030038a 8/22/2018

Utility sink

Room J2-01

1030038e 8/22/2018

Interior lighting

Second floor, room 200

1030039a 8/22/2018

Suspended wood ceiling

South entrance

1030039e 8/22/2018

Interior lighting

Second floor, room 213

1030040a 8/22/2018
Vestibule doors, hardware, and signage
South entrance

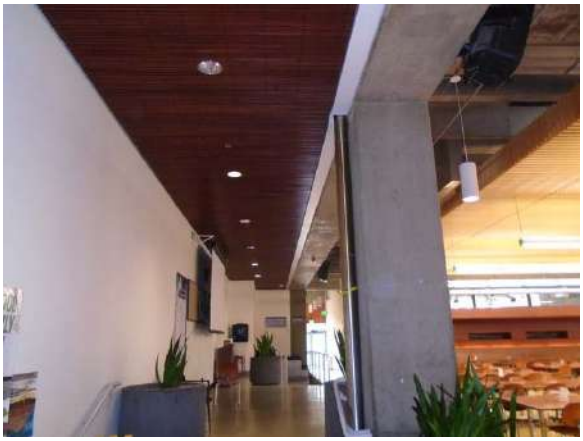
1030040e 8/22/2018
Strobe
Second floor, room 214C

1030041a 8/22/2018
Clerestory windows and wood ceiling finish
Room 260

1030041e 8/22/2018
Water heater
Second floor, room 214E

1030042a 8/22/2018
Accessible drinking fountains without required side protection
Second floor

1030042e 8/22/2018
Panelboards
Second floor, room E2-01



1030043a 8/22/2018

Wall and ceiling finishes

Main dining area

1030043e 8/22/2018

Interior lighting

Second floor, room 202N

1030044a 8/22/2018

Typical dining room finishes

Main dining area

1030044e 8/22/2018

Interior lighting

Second floor, room 202

1030045a 8/22/2018

Servery area

Main dining area

1030045e 8/22/2018

Interior lighting

Second floor, room 272

1030046a 8/22/2018

Dining area stage and ramp access

Main dining area

1030046e 8/22/2018

Interior lighting

Second floor, room 264

1030047a 8/22/2018

Stage access stair with missing handrail

Main dining area

1030047e 8/22/2018

Interior lighting

Second floor, room 264

1030048a 8/22/2018

Suspended wood slat ceiling

Main dining area

1030048e 8/22/2018

Kitchen hood

Second floor, room 253

1030049a 8/22/2018

Overhead coiling grille

Servery

1030049e 8/22/2018

Kitchen hood

Second floor, room 253

1030050a 8/22/2018

Wood overhead coiling doors at food service hatch

Room 261

1030050e 8/22/2018

Kitchen hood

Second floor, room 253

1030051a 8/22/2018

Servery area kitchen equipment

Servery

1030051e 8/22/2018

Interior lighting

Second floor, corridor 263

1030052a 8/22/2018

Servery area floor finish

Servery

1030052e 8/22/2018

Kitchen hood

Second floor, room 259

1030053a 8/22/2018

Casework and area finishes

Servery

1030053e 8/22/2018

Cooler

Second floor, room 259B

1030054a 8/22/2018

Casework with hand sink

Servery

1030054e 8/22/2018

Cooler

Second floor, room 259C

1030055a 8/22/2018
Serving hatch at the meeting rooms
Room 259b

1030055e 8/22/2018
Cooler
Second floor, room 259D

1030056a 8/22/2018
Fire-rated door label
Room 259b

1030056e 8/22/2018
Car operating panel
Elevator cab

1030057a 8/22/2018
Overhead coiling fire door at the kitchen elevator
Corridor H263

1030057e 8/22/2018
Piping
Second floor, room T2-07 pipe chase

1030058a 8/22/2018
Stair with noncompliant and missing handrails
Corridor H263

1030058e 8/22/2018
Interior lighting
Second floor, room 250

1030059a 8/22/2018
Stair with noncompliant and missing handrails
Corridor H263

1030059e 8/22/2018
Interior lighting
Second floor, room 248

1030060a 8/22/2018
Kitchen area finishes
Room 259b

1030060e 8/22/2018
Interior lighting
Second floor, room 233B

1030061a 8/22/2018

Kitchen equipment and finishes

Room 259b

1030061e 8/22/2018

Interior lighting

Second floor, room 231

1030062a 8/22/2018

Accessible elevator control panel

Kitchen elevator

1030062e 8/22/2018

Elevator controller

First floor, room M1-01

1030063a 8/22/2018

Ceiling and wall finishes

Suite 247

1030063e 8/22/2018

Evaporator

First floor, room M1-01

1030064a 8/22/2018
Ramp without required handrails
West elevation

1030064e 8/22/2018
Interior lighting
First floor, room T1-03

1030065a 8/22/2018
Exterior finishes
West elevation

1030065e 8/22/2018
Air handling unit
First floor, room 110B

1030066a 8/22/2018
Detail at replacement glazing
Suite 243

1030066e 8/22/2018
Panelboards
First floor, room 111

1030067a 8/22/2018

Exit door, hardware, and signage

Suite 243

1030067e 8/22/2018

Air handling unit

First floor, room M1-02

1030068a 8/22/2018

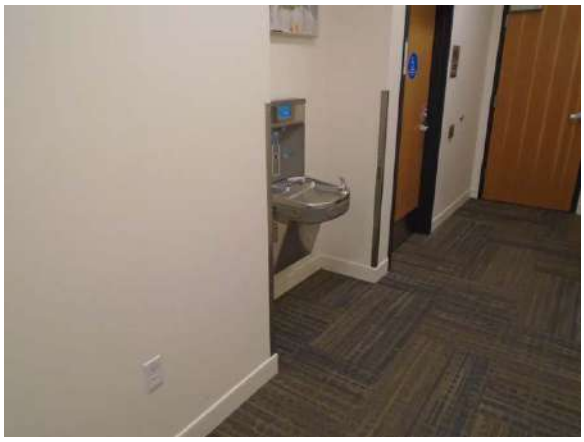
Conference room folding wall

Room 233

1030068e 8/22/2018

Interior lighting

First floor, room 122



1030069a 8/22/2018

Noncompliant drinking fountain

Suite 243

1030069e 8/22/2018

Elevator controller

First floor, room M1-04

1030070a 8/22/2018

Suite area with inadequate exit signage

Suite 243

1030070e 8/22/2018

Elevator machine

First floor, room M1-04

1030071a 8/22/2018

Stairway with noncompliant handrail spacing

Common area

1030071e 8/22/2018

Return fan

First floor, room M1-05

1030072a 8/22/2018

Utility sink

Room J1-03

1030072e 8/22/2018

Supply fan

First floor, room M1-05

1030073a 8/22/2018
Noncompliant drinking fountain
First floor north

1030073e 8/22/2018
Fire alarm panels
First floor, room M1-05

1030074a 8/22/2018
Stairway with noncompliant handrail spacing
First floor north

1030074e 8/22/2018
Supply fan
First floor, room M1-05

1030075a 8/22/2018
Stair with noncompliant handrail profile
Northwest elevation

1030075e 8/22/2018
Variable frequency drive
First floor, room M1-05

1030076a 8/22/2018
Cracked and patched concrete paving
West elevation

1030076e 8/22/2018
Backflow preventer
First floor, room M1-05

1030077a 8/22/2018
Noncompliant steps
West elevation, ground level

1030077e 8/22/2018
Pump equipment
First floor, room M1-05

1030078a 8/22/2018
Steps with noncompliant and missing handrails
Loading dock

1030078e 8/22/2018
Pump equipment
First floor, room M1-05

1030079a 8/22/2018

Ramp with missing handrail

West elevation

1030079e 8/22/2018

Automatic transfer switches

First floor, room E1-02

1030080a 8/22/2018

Loading dock area

West elevation

1030080e 8/22/2018

Panelboard

First floor, room E1-02

1030081a 8/22/2018

Steps with noncompliant and missing handrails

Near room 107

1030081e 8/22/2018

Panelboards

First floor, room E1-02

1030082a 8/22/2018
Mechanical area steps without required handrails
First floor

1030082e 8/22/2018
Interior lighting
First floor, room 116D

1030083a 8/22/2018
Mechanical area steps without required handrails
First floor

1030083e 8/22/2018
Exterior lighting
South elevation

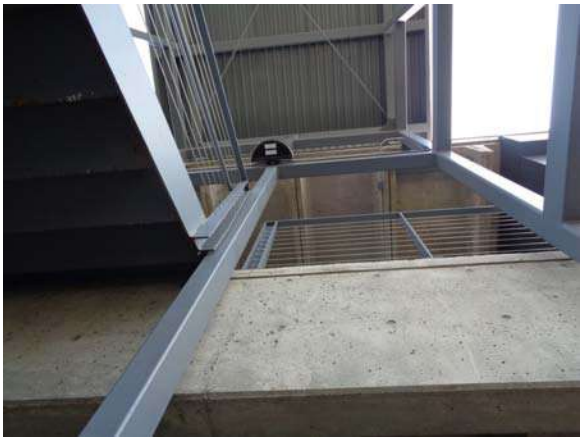
1030084a 8/22/2018
Ramp missing one required handrail
South elevation

1030084e 8/22/2018
Exterior lighting
Site

1030085a 8/22/2018

Typical entrance doors

South elevation



1030085e 8/22/2018

Exterior lighting

Building exterior

1030086a 8/22/2018

Detail at the original glazing system

South elevation

1030086e 8/22/2018

Generator

Site

1030087a 8/22/2018

Covered exterior walk

South elevation

1030087e 8/22/2018

Diesel storage tank

Site

1030088a 8/22/2018

Storefront system

West elevation

1030088e 8/22/2018

Transformers

Site

1030089a 8/22/2018

Elevator tower and building exterior

North elevation

1030090a 8/22/2018

Loading dock area

West elevation

1030091a 8/22/2018

Loading dock area

West elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1030
Asset Name	College Center
Year Built or Last Energy Renovation	1972

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

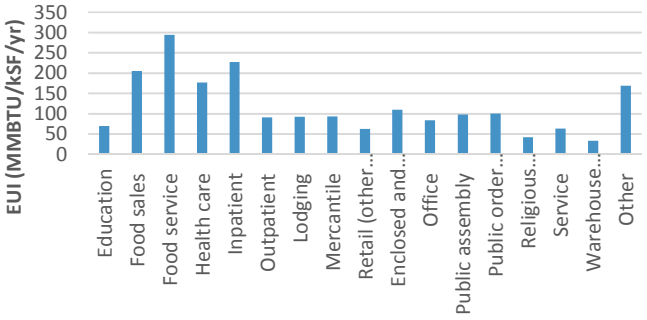
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Student Union
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**97.9**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 68.5
Energy Efficient (consumes 10% to 30% less energy)	68.5 <= EUI <= 88.1
Similar (consumes within 10% less or 10% more energy)	88.1 < EUI < 107.7
Energy Inefficient (consumes 10% to 30% more energy)	107.7 <= EUI <= 127.3
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 127.3

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

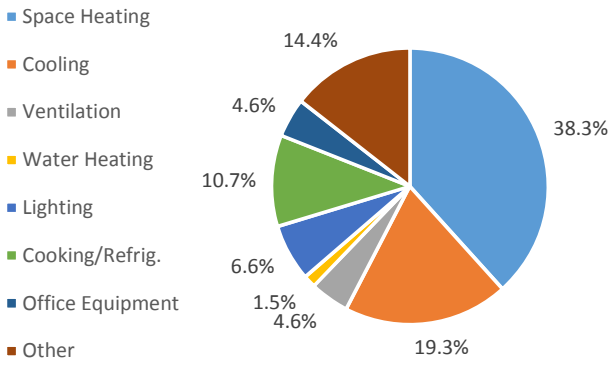


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: STUDENT UNION	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Student Union



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

College Services Building

Asset 1040

Inspected August 23, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

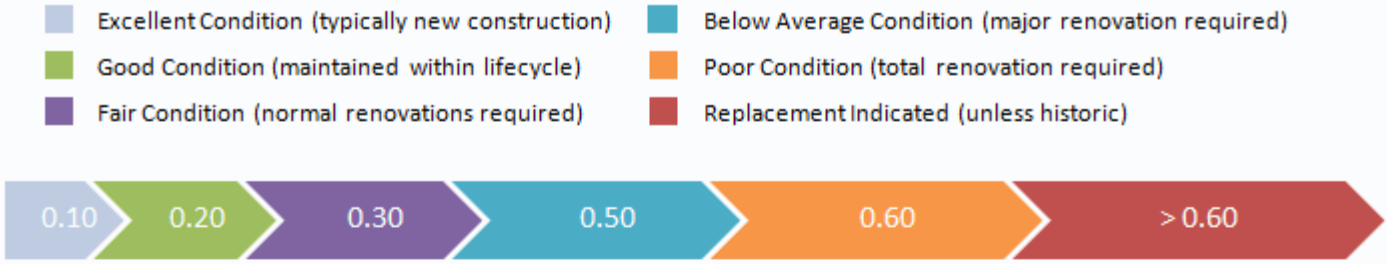
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

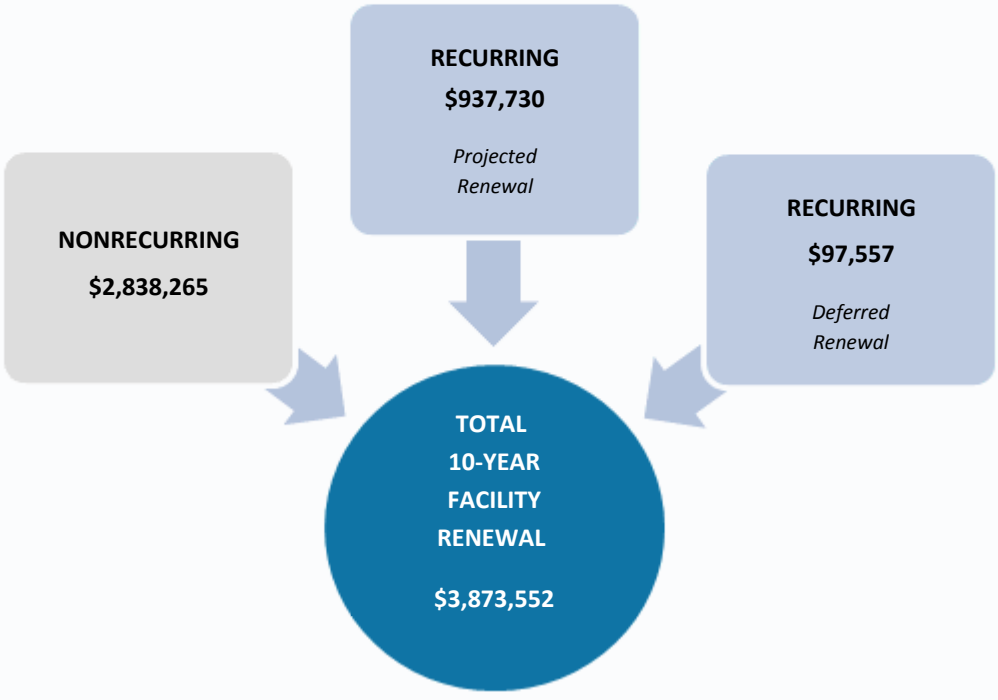
ASSET CODE	1040		
ASSET NAME	COLLEGE SERVICES BUILDING	**CURRENT REPLACEMENT VALUE**	$11,201,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.35
YEAR BUILT	2006	**FACILITY CONDITION INDEX**	0.01
GSF	27,000	**10-YEAR $/SF**	143.46
INSPECTION DATE	08/23/2018		

FCNI Scale

The FCNI for this asset is **0.35**



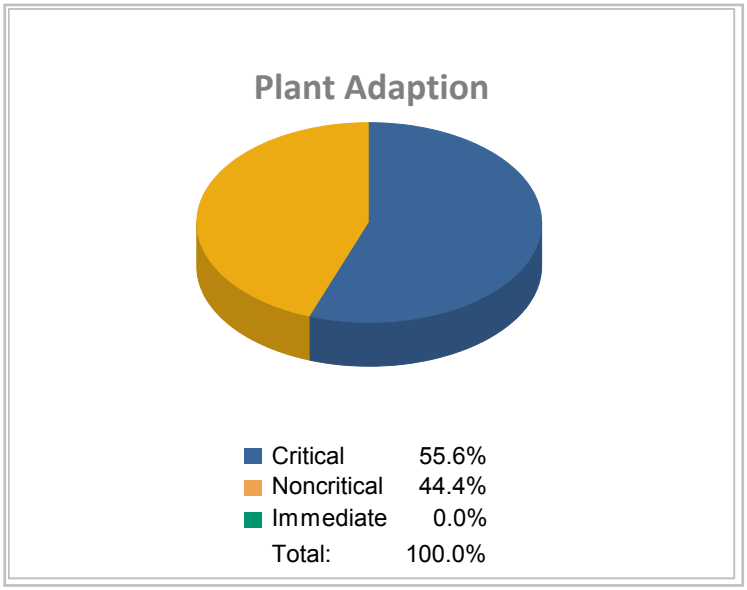
Total Facility Renewal Costs



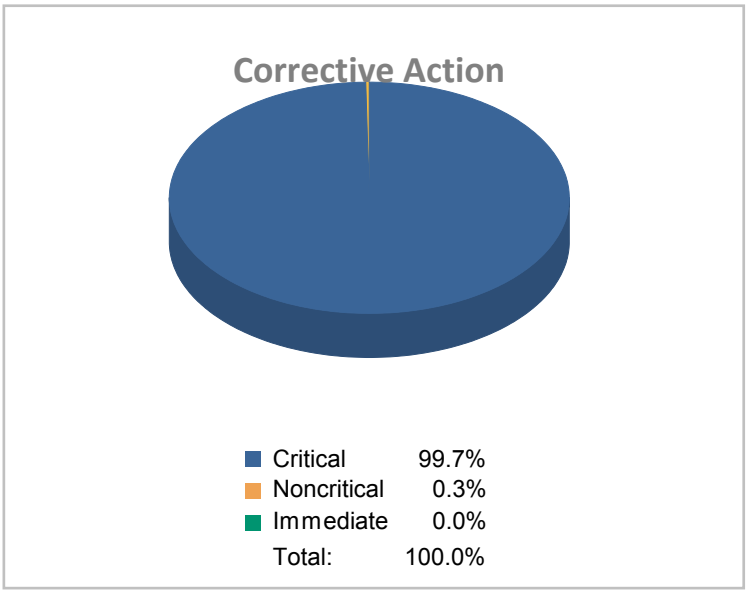
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$25,482**
3 - Noncritical	**$20,349**

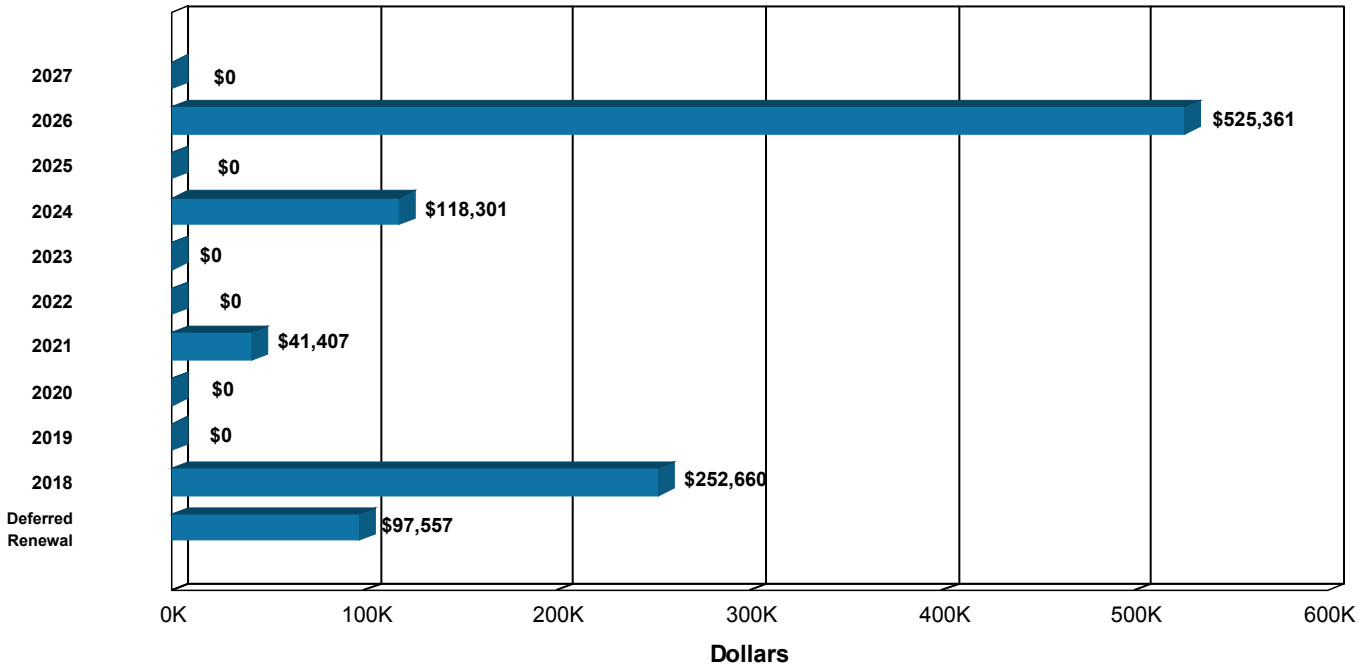


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$2,783,810**
3 - Noncritical	**$8,625**

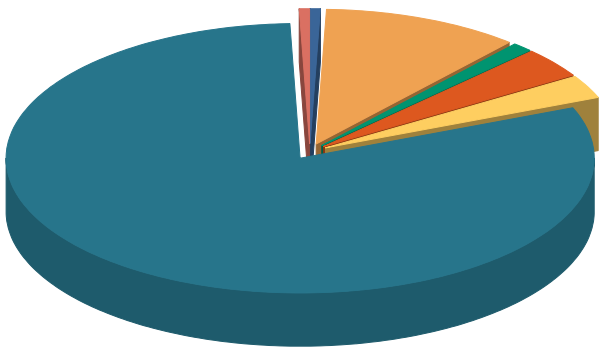


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$21,513	1%
Electrical	$416,750	11%
Exterior	$45,186	1%
Fire/Life Safety	$142,619	4%
Health	$0	0%
HVAC	$109,305	3%
Interiors	$3,118,145	80%
Plumbing	$20,034	1%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$3,873,552**	

ASSET SUMMARY

The College Services Building is a support facility on the Portland Community College, Sylvania campus. The three-story structure is embedded into the side of a hill with the lower two floors partially below grade as the site slopes down around the building. The sloped site also allows grade-level access to each floor. The building houses the College Police and Parking departments as wells as the Facilities Management and Campus Planning functions. Built in 2006, the building encloses 27,000 gross square feet of floor space including offices, meeting space, material storage areas, and vehicular service bays.

Included with this report is a major renovation and rehabilitation project which addresses a wide range of structural, infrastructure, and functional needs identified by college staff and covering most of the areas included in the standard FCA. This project includes costs and elements covered in the lifecycle portion of this assessment and in other single issue projects.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The building is located at the south end of the campus near the Automotive Metals building and the Heat Plant. Asphalt parking lots on the north and south of the building provide service vehicle parking and storage as well as outdoor storage for maintenance supplies received by the college. Pedestrian access to the upper level police and parking departments is by way of concrete sidewalks. The building is surrounded by a variety of plant materials in both landscaped and natural settings. The site is in an appropriate condition for the use of the building and no improvements are recommended.

Exterior Structure

The roof system is an asphaltic membrane that is in good condition as are the three small aluminum and glass skylights. The exterior walls are cast concrete and metal siding. These materials are in good condition and should last another ten or more years. Several sections of the wall are finished with fiberglass-type translucent panels which should outlast the scope of this report. The windows are standard fixed and operable sash units in good condition. Many of the windows have solar shading fins which are in acceptable condition for continued service, but have begun to rust and should be repainted within the next ten years to prolong their life. The flush hollow-metal doors, the wood doors with vision panels, and the various metal overhead doors should all last another ten years.

Interior Finishes/Systems

The floor finishes include carpet, sheet vinyl, and polished, sealed concrete. All of these materials are recommended for renewal or replacement within the next ten years. The interior walls are painted and although in good condition, they should be repainted within the next few years. The ceilings are

suspended acoustical tile or painted hard surfaces, all of which should last beyond the next ten years. The interior doors and various casework installations are also in good condition and should outlast the scope of this report.

Accessibility

This building has few barriers to accessibility. The entrances are at grade-level, there are accessible restrooms, the elevator has a compliant control panel, and the doors have compliant hardware. However, the configuration of the drinking fountain in suite 208 is a barrier to accessibility. This single-level drinking fountain should be replaced with a dual-level unit and protected by cane guards or alcove walls. Additionally, the second floor break room casework is not fully accessible and the sink and base cabinets at the sink should be replaced with ADA-compliant products.

Current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. This scope includes directional signage.

Accessibility legislation also requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The lower level of the interior stairwell has low headroom which should be guarded with rails to prevent injury to building occupants who are visually impaired.

Health

An emergency shower/eyewash station and a single eyewash station are available in the event of a mishap. The equipment appears to be well marked and in good condition. The fixtures should continue to serve the facility over the next ten years.

Fire/Life Safety

The building has grade level exits on all three levels, and the exits and exit pathways are marked with illuminated exit signs. Emergency lighting is believed to be contained in select overhead fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a Silent Knight modern fire alarm system with the main addressable fire alarm panel in room E1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. While the system appears to provide adequate coverage, replacement may need to be considered on a low priority basis. A Wheellock mass notification panel was also observed and inventoried for information purposes.

The facility has an automatic sprinkler system for fire suppression with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility is on the campus hot and chilled water loops. The heating hot water circulation is in adequate condition and has remaining service life. An indoor air handling unit (AHU) and fan coil unit (FCU) provide tempered air. The units are equipped with hot water and chilled water coils. Distribution equipment consists of metal ductwork equipped with variable air volume (VAV) boxes. Controls are a digital application installed when the facility was constructed. The HVAC equipment is in adequate condition but a control upgrade should be scheduled within the scope of this report.

The facility also incorporates rooftop package units (RTU) and split systems to provide heating and cooling. The equipment has DX refrigerant for cooling and electric heating. Most of the HVAC equipment is original except for one RTU that was installed in 2011. All of this equipment has remaining service life beyond the scope of this report.

Facility exhaust is provided by rooftop centrifugal and inline centrifugal fans as well as propeller type fan. The fans serve restrooms and general exhaust needs. Based on age, most have remaining service life beyond the scope of this report. The propeller fan will reach the end of its service life within the next ten years and may need to be considered for replacement.

Electrical

Power is supplied to the facility via underground utilities at 120/208 volts. A Square D main switchboard receives the power for distribution. The unit appears to be well maintained and has substantial remaining service life. Power is then supplied to panelboards for distribution throughout the facility energizing circuits for mechanical, lighting, and general purpose loads. The distribution system is in adequate condition and properly marked.

The interior lighting consists of surface-mount and suspended fixtures equipped with parabolic and acrylic lenses. The fixtures are lamped with T8 fluorescent bulbs. Occupancy sensors conserve energy. Although the interior lighting scheme appears to be in good condition, it will reach the end of its service life at the end of the next ten years and may need to be considered for replacement on a low priority basis.

Exterior lighting consists of eave-mounted fluorescent fixtures at entryways. Additional lighting is provided by pole-mounted fixtures on the site and lighting from adjacent facilities. The fixtures appear to be well maintained and in good condition. However, based on age replacement of some of the lighting may need to be considered within scope of this report.

Emergency power is provided by a district source. Two automatic transfer switches provide the power for distribution. The General Electric units were installed in 2004 and are in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to an exhaust fan, air handling unit, pumps, and rooftop package unit. The VFDs were installed when the facility was constructed and will reach the end of their service life within the next ten years.

Plumbing

The domestic water system is supplied through a copper piping network. Backflow preventers on the water system prevent cross contamination. Drain piping is believed to be constructed of cast-iron with no hub connections. The piping systems, where they could be viewed, appear to be in adequate condition. Based on age, the piping systems have substantial remaining service life. However, the backflow preventers will reach the end of their service life toward the end of the next ten years and may need to be replaced on a low priority basis.

Domestic hot water is provided by two Bradford White, gas-fired, commercial water heaters. A small pump assists in circulation and an expansion tank supports the system. The equipment is in excellent condition with no recommendations. Additionally, two instantaneous water heaters serve select sinks. These units are in good condition but due to a short lifecycle, replacement may need to be considered in the near future. An air compressor for utility service to the garage is in good condition with no recommendations.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, showers, kitchen sinks, and utility sinks. The kitchen sinks are approaching the end of their useful service life and should be replaced. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The facility has a hydraulic passenger elevator installed when the facility was constructed. The system serves three floors and has a rated capacity of 2,500 pounds. The elevator utilizes a MCE nonproprietary controller for operation. The elevator equipment appears to be in good condition and was operating properly on the day of inspection. Based on industry standards, it has remaining service life beyond the scope of this report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

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Date of Inspection

August 23, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	1,164	20,349	0	0	0	0	0	0	0	0	0	0	0	$21,513
EXTERIOR	0	0	8,625	0	9,480	0	0	0	0	0	0	0	27,081	0	$45,186
INTERIOR	0	2,783,810	0	63,762	243,180	0	0	27,394	0	0	0	0	0	0	$3,118,145
PLUMBING	0	0	0	1,980	0	0	0	0	0	0	0	0	18,054	0	$20,034
HVAC	0	0	0	31,815	0	0	0	0	0	0	0	0	77,490	0	$109,305
FIRE/LIFE SAFETY	0	24,318	0	0	0	0	0	0	0	0	118,301	0	0	0	$142,619
ELECTRICAL	0	0	0	0	0	0	0	14,014	0	0	0	0	402,736	0	$416,750
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$2,809,292	$28,974	$97,557	$252,660	$0	$0	$41,407	$0	$0	$118,301	$0	$525,361	$0	$3,873,552
TOTAL NONRECURRING PROJECT NEEDS			$2,838,265	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,035,287	

CURRENT REPLACEMENT VALUE	$11,201,000
FACILITY CONDITION NEEDS INDEX	0.35
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
27,000	$3,873,552	$143.46

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$21,513	$0	$21,513
EXTERIOR	$8,625	$36,561	$45,186
INTERIOR	$2,783,810	$334,335	$3,118,145
PLUMBING	$0	$20,034	$20,034
HVAC	$0	$109,305	$109,305
FIRE/LIFE SAFETY	$24,318	$118,301	$142,619
ELECTRICAL	$0	$416,750	$416,750
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$2,838,265**	**$1,035,287**	**$3,873,552**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1040FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	24,318
1040AC03	LOW HEADROOM GUARDRAIL INSTALLATION	C2020	2	Plant Adaption	1,164
1040IS01	CRITICAL STRUCTURAL UPGRADES & IMPROVEMENTS LESS IT COSTS	C4010	2	Corrective Action	2,783,810
1040ES01	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	8,625
1040AC01	DRINKING FOUNTAIN & CASEWORK ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	13,545
1040AC02	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	6,804
				TOTAL	**$2,838,265**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1040	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			C3020	Deferred Renewal	63,762
1040	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		204	D2020	Deferred Renewal	990
1040	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		305	D2020	Deferred Renewal	990
1040	BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				D3060	Deferred Renewal	21,077
1040	BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				D3060	Deferred Renewal	10,739
1040	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2018	4,732
1040	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2018	4,748
1040	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2018	199,696
1040	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2018	43,484
1040	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2021	27,394
1040	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-1	0000001128	101	D5010	2021	727
1040	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-1	0000001134	101	D5010	2021	727
1040	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	0000001137	101	D5010	2021	1,453
1040	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-1	0000000756	ROOF	D5010	2021	5,554
1040	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-1	0000000761	ROOF	D5010	2021	5,554
1040	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2024	116,047
1040	FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	14406338	E1-1	D4030	2024	2,254

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1040	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			B2030	2026	6,770
1040	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			B2030	2026	20,311
1040	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2026	2,318
1040	BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC	0000001112	202	D2020	2026	7,331
1040	BF04	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER	0000006907	202	D2020	2026	8,406
1040	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-4	0000001149	205	D3040	2026	2,726
1040	BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE				D3060	2026	74,764
1040	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			D5020	2026	7,120
1040	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2026	7,509
1040	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				D5020	2026	353,660
1040	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2026	34,448
							TOTAL	**$1,035,287**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
3	1040IS01	CRITICAL STRUCTURAL UPGRADES & IMPROVEMENTS LESS IT COSTS	2	$2,783,810
6	1040ES01	EXTERIOR WALL FINISH RENEWAL	3	$8,625
		TOTAL FOR CORRECTIVE ACTION		**$2,792,434**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1040FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$24,318
2	1040AC03	LOW HEADROOM GUARDRAIL INSTALLATION	2	$1,164
4	1040AC01	DRINKING FOUNTAIN & CASEWORK ACCESSIBILITY UPGRADES	3	$13,545
5	1040AC02	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	3	$6,804
		TOTAL FOR PLANT ADAPTION		**$45,831**
		GRAND TOTAL:		**$2,838,265**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	1040AC03	2	Plant Adaption	LOW HEADROOM GUARDRAIL INSTALLATION	$1,164
4	1040AC01	3	Plant Adaption	DRINKING FOUNTAIN & CASEWORK ACCESSIBILITY UPGRADES	$13,545
5	1040AC02	3	Plant Adaption	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	$6,804
				TOTAL FOR ACCESSIBILITY	**$21,513**
6	1040ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$8,625
				TOTAL FOR EXTERIOR	**$8,625**
1	1040FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$24,318
				TOTAL FOR FIRE/LIFE SAFETY	**$24,318**
3	1040IS01	2	Corrective Action	CRITICAL STRUCTURAL UPGRADES & IMPROVEMENTS LESS IT COSTS	$2,783,810
				TOTAL FOR INTERIORS	**$2,783,810**
				GRAND TOTAL:	**$2,838,265**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1040FS01	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/18/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	22	$304	$6,688	$488	$10,736	$17,424
Base Material/Labor Costs				**$6,688**		**$10,736**	
Indexed Material/Labor Costs				**$6,648**		**$10,822**	**$17,470**
Construction Mark Up at 20.0%							**$3,494**
Original Construction Cost							**$20,964**
Date of Original Estimate: 10/18/2018						**Inflation**	**$0**
Current Year Construction Cost							**$20,964**
Professional Fees at 16.0%							**$3,354**
TOTAL PROJECT COST							**$24,318**

All costs shown as Present Value

LOW HEADROOM GUARDRAIL INSTALLATION

Project Number:	1040AC03	**Category Code:** AC3B	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/18/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Item Only: Floor(s) 1
ADAAG	505		

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The lower level of the interior stairwell has low headroom which should be guarded with rails to prevent injury to visually impaired building occupants.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Railing system up to 42 inches high with pickets at 4 1/2 inches on center	LF	10	$45.53	$455	$38.05	$381	$836
Base Material/Labor Costs				**$455**		**$381**	
Indexed Material/Labor Costs				**$453**		**$384**	**$836**
Construction Mark Up at 20.0%							**$167**
Original Construction Cost							**$1,003**
Date of Original Estimate: 10/18/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,003**
Professional Fees at 16.0%							**$161**
TOTAL PROJECT COST							**$1,164**

All costs shown as Present Value

CRITICAL STRUCTURAL UPGRADES & IMPROVEMENTS LESS IT COSTS

Project Number:	1040IS01
Priority Sequence:	3
Priority Class:	Critical
Project Class:	Corrective Action
Date Basis:	12/4/2018

Category Code: IS6D

System:	INTERIOR FINISHES/SYS
Component:	GENERAL
Element:	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

Various structural and utility systems in the building are in need of improvements to meet current functional requirements. The cost items in this project cover and potentially replace items also listed in the LifeCycle Model in this report. Work in this project includes building structures and utilities as well as functional layout changes and associated replacement or renewal of finishes. The costs represented in this project are from a construction cost estimate provided by the college.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Total direct project costs	LOT	1	$1,514,656	$1,514,656	$0.00	$0	$1,514,656
Overhead, contingency, fees	LOT	1	$497,279	$497,279	$0.00	$0	$497,279
Base Material/Labor Costs				**$2,011,935**		**$0**	
Indexed Material/Labor Costs				**$1,999,863**		**$0**	**$1,999,863**
Construction Mark Up at 20.0%							**$399,973**
Original Construction Cost							**$2,399,836**
Date of Original Estimate: 12/4/2018						**Inflation**	**$0**
Current Year Construction Cost							**$2,399,836**
Professional Fees at 16.0%							**$383,974**
TOTAL PROJECT COST							**$2,783,810**

All costs shown as Present Value

DRINKING FOUNTAIN & CASEWORK ACCESSIBILITY UPGRADES

Project Number:	1040AC01	**Category Code:** AC4A	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/18/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602, 804	Not Applicable	Item Only: Floor(s) 2

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the drinking fountain in suite 208 is a barrier to accessibility. This single-level drinking fountain should be replaced with a dual-level unit and protected by cane guards or alcove walls. Additionally, the break room casework on the second floor is not fully accessible. The sink and base cabinets at the sink should be replaced with ADA-compliant products.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and ME updates	EA	1	$932	$932	$3,321	$3,321	$4,254
ADA-compliant kitchen sink with base cabinetry knee space and accessible storage shelving upgrade	EA	1	$2,098	$2,098	$1,340	$1,340	$3,438
			Base Material/Labor Costs	**$4,579**		**$5,138**	
			Indexed Material/Labor Costs	**$4,552**		**$5,179**	**$9,731**
					Construction Mark Up at 20.0%		**$1,946**
					Original Construction Cost		**$11,677**
Date of Original Estimate: 10/18/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$11,677**
					Professional Fees at 16.0%		**$1,868**
					TOTAL PROJECT COST		**$13,545**

All costs shown as Present Value

INTERIOR SIGNAGE ACCESSIBILITY UPGRADES

Project Number:	1040AC02	**Category Code:** AC3D	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/18/2018	**Element:**	SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	703.1	Not Applicable	Floor-wide: Floor(s) 1,2,3

Description

Current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. This scope includes directional signage.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	56	$67.64	$3,788	$19.89	$1,114	$4,902
Base Material/Labor Costs				**$3,788**		**$1,114**	
Indexed Material/Labor Costs				**$3,765**		**$1,123**	**$4,888**
Construction Mark Up at 20.0%							**$978**
Original Construction Cost							**$5,865**
Date of Original Estimate: 10/18/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,865**
Professional Fees at 16.0%							**$938**
TOTAL PROJECT COST							**$6,804**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	1040ES01
Priority Sequence:	6
Priority Class:	Noncritical
Project Class:	Corrective Action
Date Basis:	10/18/2018

Category Code: ES2B

System:	EXTERIOR
Component:	COLUMNS/BEAMS/WALLS
Element:	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1,2,3

Description

The solar shading fins are in acceptable condition for continued service but have begun to rust and should be repainted within the next ten years to prolong the life of the materials.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	2,400	$0.64	$1,536	$1.93	$4,632	$6,168
Base Material/Labor Costs				**$1,536**		**$4,632**	
Indexed Material/Labor Costs				**$1,527**		**$4,669**	**$6,196**
Construction Mark Up at 20.0%							**$1,239**
Original Construction Cost							**$7,435**
Date of Original Estimate: 10/18/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,435**
Professional Fees at 16.0%							**$1,190**
TOTAL PROJECT COST							**$8,625**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL				6,910	SF	$80,473	2006	30		2036
EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL	SOLAR SHADING			2,400	SF	$27,950	2006	30		2036
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				2,300	SF	$5,297	2006	30		2036
WN05	GLASS, STOREFRONT	WOOD & POLY-CRBNTE			920	SF	$129,891	2006	40		2046
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				1,380	SF	$249,721	2006	40		2046
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			5	LEAF	$10,033	2006	40		2046
DR09	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM	PANIC HDW			4	LEAF	$23,005	2006	35		2041
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				1,008	SF	$105,024	2006	30		2036
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			3	EA	$20,311	2006	20		2026
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			1	EA	$6,770	2006	20		2026
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				7	EA	$14,662	2006	30		2036
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				5	EA	$4,732	2006	12		2018
DR36	DOOR PANIC HARDWARE, EXTERIOR				4	EA	$4,748	2006	12		2018
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	REFLECTIVE COATING			10,500	SF	$219,528	2006	30		2036
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				27	SF	$7,727	2006	35		2041

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				56	LEAF	$123,841	2006	60		2066
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				2	LEAF	$7,337	2006	60		2066
DR03	DOOR - OVERHEAD, INTERIOR			105	120	SF	$12,503	2006	45		2051
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				56	EA	$42,162	2006	35		2041
DR26	DOOR PANIC HARDWARE, INTERIOR				2	EA	$2,374	2006	30		2036
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK AREAS	122	LF	$68,428	2006	30		2036
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			MAINTENANCE SHOP	20	LF	$11,218	2006	30		2036
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			204	12	LF	$6,731	2006	30		2036
IW01	WALL FINISH - APPLIED, STANDARD				71,550	SF	$199,696	2006	12		2018
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				3,650	SF	$43,484	2006	12		2018
IF04	FLOORING - VINYL SHEET, STANDARD				2,430	SF	$27,394	2006	15		2021
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			18,230	SF	$63,762	2006	10	1	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				20	SF	$223	2006	45		2051
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				20	SF	$56	2006	24		2030
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	0000004409	M1-1	1	EA	$257,984	2006	25		2031
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	$2,694	2006	25		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				9	EA	$12,160	2006	35		2041
FX04	PLUMBING FIXTURE - SINK, KITCHEN				3	EA	$2,318	2006	20		2026
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	$4,993	2006	50		2056
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				2	EA	$2,275	2006	35		2041
FX10	PLUMBING FIXTURE - URINAL				3	EA	$3,236	2006	35		2041
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				7	EA	$11,865	2006	35		2041
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH	HAWS	0000001145	205	1	EA	$1,080	2006	35		2041
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH	HAWS	0000001129	101	1	EA	$1,539	2006	35		2041
BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC	0000001112	202	1	EA	$7,331	2006	20		2026
BF04	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER	0000006907	202	1	EA	$8,406	2006	20		2026
PS14	SUPPLY PIPING SYSTEM - OFFICE				27,000	SF	$111,705	2006	50		2056
TK06	EXPANSION TANK, STL PT (<20 GAL)			116	10	GAL	$1,008	2006	30		2036
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	WH-1	0000001116	116	199	MBH	$16,468	2006	25		2031
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	WH-2	0000001115	116	199	MBH	$16,468	2006	25		2031
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		204	1	EA	$990	2006	10	1	DR
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		305	1	EA	$990	2006	10	1	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PD14	DRAIN PIPING SYSTEM - OFFICE				27,000	SF	$167,082	2006	60		2066
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	INGERSOL RAND	0000005993	103	7	HP	$14,493	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004647	ROOF	2	TON	$2,107	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004648	ROOF	1	TON	$1,053	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-1	0000001152	SITE	1	TON	$1,053	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-2	0000001150	SITE	1	TON	$1,053	2006	25		2031
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-3	0000001151	SITE	1	TON	$1,053	2006	25		2031
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	AC-1	0000007572	M1-1	1	TON	$1,366	2006	30		2036
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)		0000006827	IDF	1	TON	$1,366	2006	30		2036
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)		0000007571	E1-1	1	TON	$1,366	2006	30		2036
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)		0000006826	BDF	1	TON	$1,366	2006	30		2036
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)				1	TON	$2,970	2006	30		2036
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-1	0000001127	101	1	HP	$8,882	2006	35		2041
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FCU-1	0000001135	101	1	HP	$8,882	2006	35		2041
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000000759	ROOF	1	EA	$3,773	2006	25		2031
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-8	0000000760	ROOF	1	EA	$3,773	2006	25		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2	0000001136	101	2	HP	$2,642	2006	35		2041
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-6	0000001130	101	1	HP	$1,321	2006	35		2041
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-1	0000001113	TF-1	1	HP	$1,321	2006	35		2041
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-5	0000001107	210	1	HP	$1,321	2006	35		2041
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	SF-1	0000001147	206	1	HP	$1,321	2006	35		2041
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-4	0000001149	205	1	HP	$2,726	2006	20		2026
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE				27,000	SF	$776,213	2006	45		2051
PH01	PUMP - ELECTRIC (<=10 HP)	RCP-1		116	1	HP	$1,693	2006	30		2036
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000001133	101	1	HP	$1,693	2006	30		2036
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	CARRIER	000000758	ROOF	2	TON	$8,482	2006	25		2031
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	AAON	0000005308	ROOF	5	TON	$21,204	2011	25		2036
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE				27,000	SF	$74,764	2006	20		2026
BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE				27,000	SF	$21,077	2006	10	1	DR
BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE				27,000	SF	$10,739	2006	10	1	DR
FS01	FIRE SPRINKLER SYSTEM - WET				27,000	SF	$365,273	2006	80		2086
FA01	FIRE ALARM SYSTEM - DEVICES				27,000	SF	$116,047	2006	18		2024

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	14406338	E1-1	1	EA	$2,254	2006	18		2024
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		BDF	1	EA	$2,254	2010	18		2028
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE				27,000	SF	$598,043	2006	50		2056
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	2MDP	0000001120	E1-1	1,200	AMP	$89,981	2006	40		2046
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	0000001137	101	2	HP	$1,453	2006	15		2021
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-1	0000001128	101	1	HP	$727	2006	15		2021
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-1	0000001134	101	1	HP	$727	2006	15		2021
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-1	0000000756	ROOF	10	HP	$5,554	2006	15		2021
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-1	0000000761	ROOF	10	HP	$5,554	2006	15		2021
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			14	EA	$7,120	2006	20		2026
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	6	EA	$11,686	2006	40		2046
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	6	EA	$7,509	2006	20		2026
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				27,000	SF	$353,660	2006	20		2026
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				15,000	SF	$34,448	2006	20		2026
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	ATS-EM	0000001122	E1-1	100	AMP	$5,910	2006	25		2031
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	ATS-OSA	0000001121	E1-1	50	AMP	$2,955	2006	25		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$4,741,893				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE	18,230	SF	$63,762	DR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$990	DR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$990	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE		27,000	SF	$10,739	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE		27,000	SF	$21,077	DR
				TOTAL DEFERRED RENEWAL COST	$97,557	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		3,650	SF	$43,484	2018
C3010	WALL FINISH - APPLIED, STANDARD		71,550	SF	$199,696	2018
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		5	EA	$4,732	2018
B2030	DOOR PANIC HARDWARE, EXTERIOR		4	EA	$4,748	2018
2018		PROJECTED COMPONENT REPLACEMENT COST			$252,660	

No Projected Component Replacement Cost for Asset No. 1040 for 2019

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1040 for 2020

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - VINYL SHEET, STANDARD		2,430	SF	$29,934	2021
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	2	HP	$1,588	2021
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-1	1	HP	$794	2021
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-1	1	HP	$794	2021
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-1	10	HP	$6,069	2021
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RTU-1	10	HP	$6,069	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$45,247	

No Projected Component Replacement Cost for Asset No. 1040 for 2022

No Projected Component Replacement Cost for Asset No. 1040 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	1	EA	$2,692	2024

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D4030	FIRE ALARM SYSTEM - DEVICES		27,000	SF	$138,566	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$141,258**	

No Projected Component Replacement Cost for Asset No. 1040 for 2025

2026

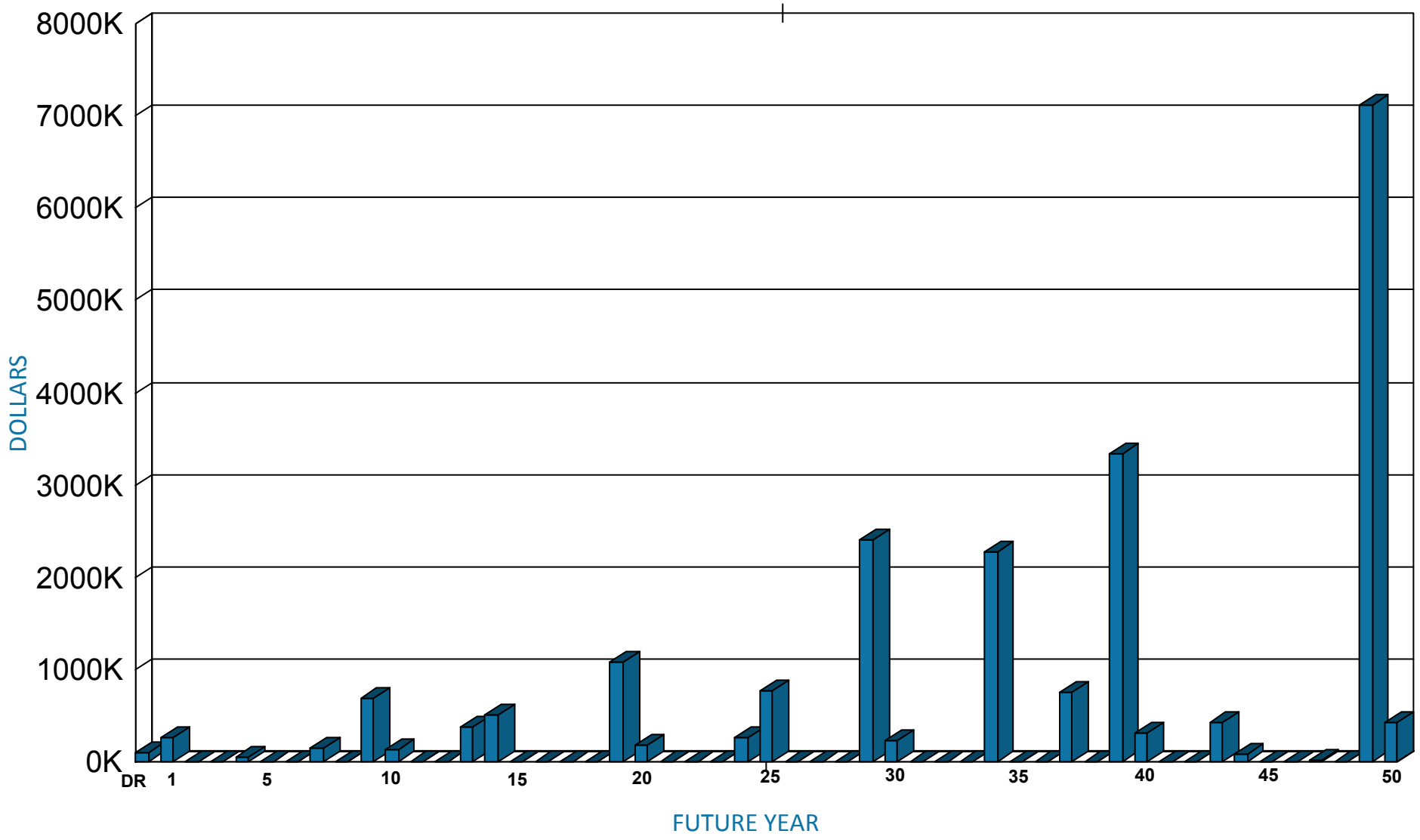
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS	3	EA	$25,729	2026
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS	1	EA	$8,576	2026
D2010	PLUMBING FIXTURE - SINK, KITCHEN		3	EA	$2,936	2026
D5020	LIGHTING SYSTEM, INTERIOR - OFFICE		27,000	SF	$448,006	2026
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		15,000	SF	$43,638	2026
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	14	EA	$9,019	2026
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		6	EA	$9,512	2026
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE		27,000	SF	$94,709	2026
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EF-4	1	HP	$3,453	2026
D2020	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER	1	EA	$10,648	2026
D2020	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC	1	EA	$9,286	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$665,512**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1040 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



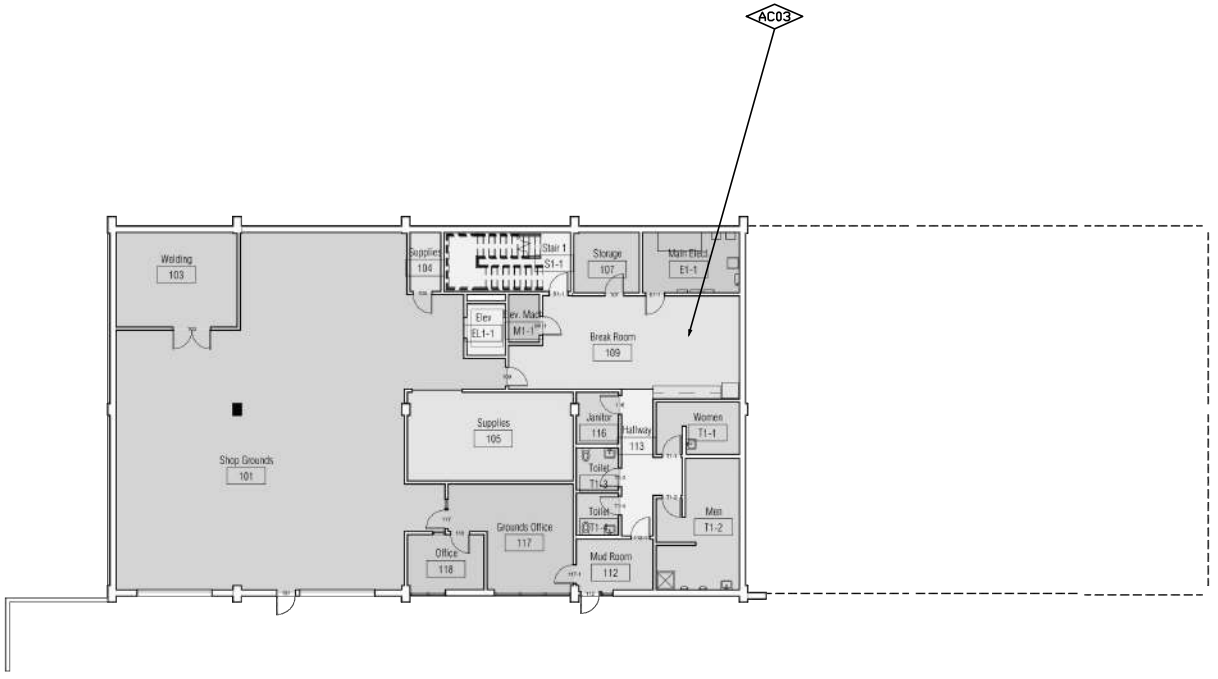
Average Annual Renewal Cost per SF $5.96

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



ES01

AC02

COLLEGE SERVICES BUILDING

BLDG NO. 1040

ES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/29/2018

Drawn by: A.W.

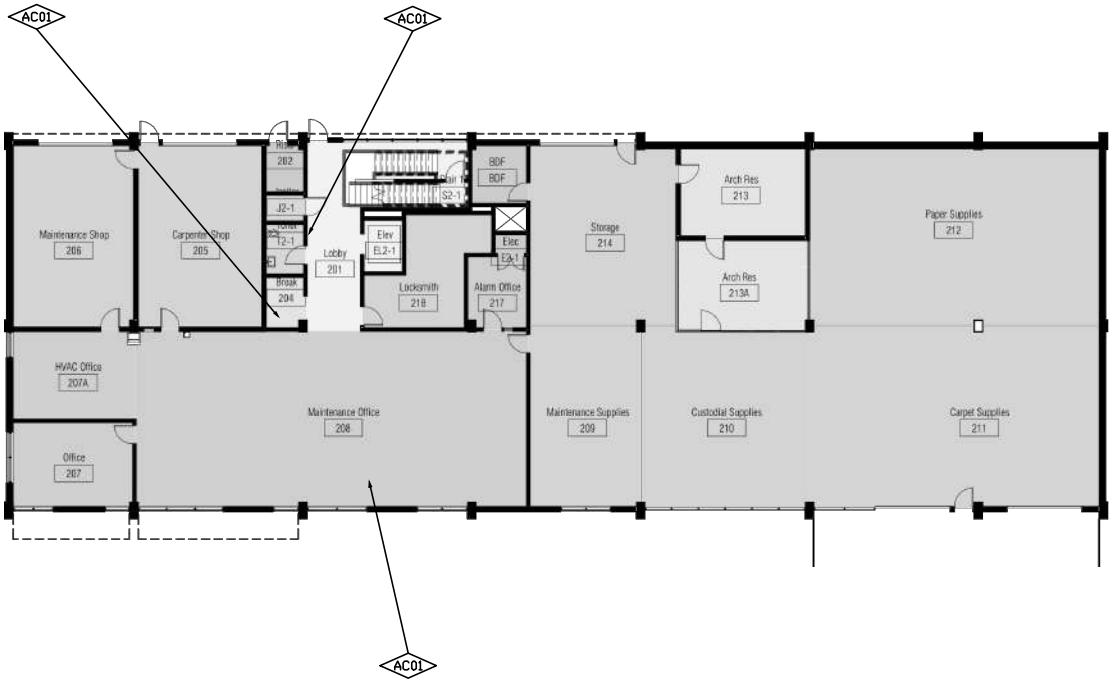
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.

1 of 3

PORTLAND COMMUNITY COLLEGE



AC02

COLLEGE SERVICES BUILDING

BLDG NO. 1040

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/29/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

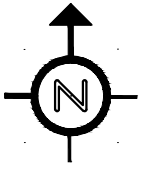
Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

ROOF

FS01

AC02



COLLEGE SERVICES BUILDING

BLDG NO. 1040

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/29/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

1040001a 8/23/2018

Roof condition

Roof

1040001e 8/23/2018

Package HVAC unit

Roof

1040002a 8/23/2018

Typical flashing at roof-mounted equipment

Roof

1040002e 8/23/2018

Package HVAC unit

Roof

1040003a 8/23/2018

Typical roof surface condition

Roof

1040003e 8/23/2018

Exhaust fan

Roof

1040004a 8/23/2018

Skylights

Roof

1040004e 8/23/2018

Condensing units

Roof

1040005a 8/23/2018

Roof access

Roof

1040005e 8/23/2018

Sink

Third floor, room 305

1040006a 8/23/2018

Roof drain and roof edge with no fall protection

Roof

1040006e 8/23/2018

Water heater

Third floor, room 305

1040007a 8/23/2018

Break room casework and sink

Room 305

1040007e 8/23/2018

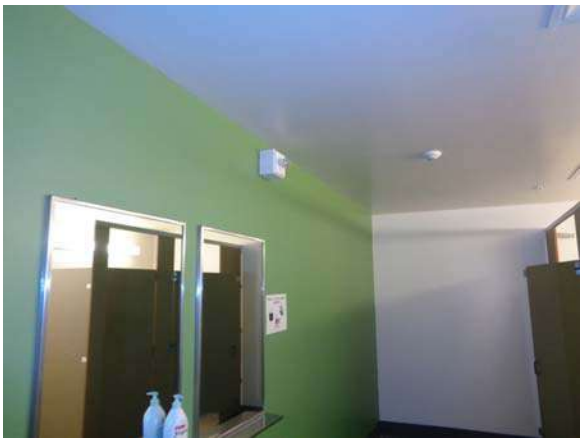
Evaporator

Third floor, room IDF

1040008a 8/23/2018

Detail at a typical window unit

Room 305



1040008e 8/23/2018

Strobe and occupancy sensor

Third floor, restroom

1040009a 8/23/2018

Corridor finishes

Corridor 315

1040009e 8/23/2018

Lavatories and interior lighting

Third floor, restroom

1040010a 8/23/2018

Door with compliant hardware but missing required signage

Corridor 315

1040010e 8/23/2018

Annunciator panel

Third floor, room 301

1040011a 8/23/2018

Accessible drinking fountains

Corridor 302

1040011e 8/23/2018

Ductwork and interior lighting

Third floor, room 329

1040012a 8/23/2018

Urinal, screen, and lavatory

Room 303

1040012e 8/23/2018

Ductwork

Third floor, room 320

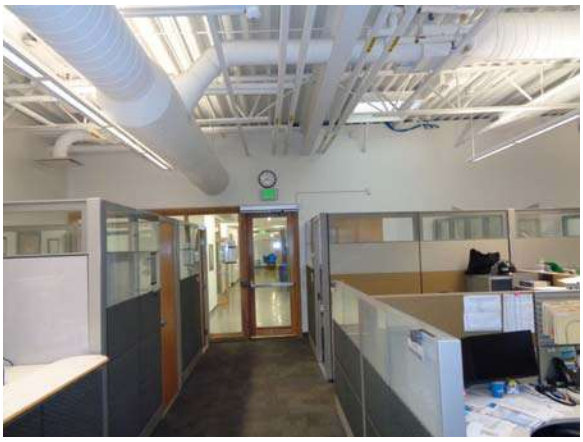
1040013a 8/23/2018
Accessible toilet and accessories
Room 303

1040013e 8/23/2018
Strobe, interior lighting, and sprinkler head
Third floor, room T3-3

1040014a 8/23/2018
Lavatories and area finishes
Room 304

1040014e 8/23/2018
Interior lighting
Third floor, room 316

1040015a 8/23/2018
Accessible toilet, partitions, and accessories
Room 304



1040015e 8/23/2018
Exit signage and interior lighting
Third floor, room 314

1040016a 8/23/2018
Accessible service counter
Corridor 302

1040016e 8/23/2018
Car operating panel
Elevator cab

1040017a 8/23/2018
Entrance doors with hardware and signage
Lobby 301

1040017e 8/23/2018
Fire extinguisher, pull station, and unit heater
Second floor, room 211

1040018a 8/23/2018
Work area casework
Room 330

1040018e 8/23/2018
Interior lighting
Second floor, room 212

1040019a 8/23/2018
Accessible restroom water closet and lavatory
Room 323

1040019e 8/23/2018
Evaporator
Second floor, room BDF

1040020a 8/23/2018
Work area casework
Reception 321

1040020e 8/23/2018
Unit heater
Second floor, room 209

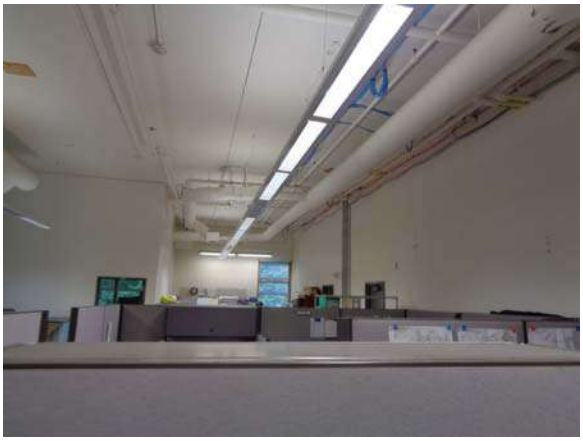
1040021a 8/23/2018
Office area finishes
Suite 314

1040021e 8/23/2018
Exhaust fan
Second floor, room 209

1040022a 8/23/2018

Office area finishes

Suite 314



1040022e 8/23/2018

Interior lighting

Second floor, room 208

1040023a 8/23/2018

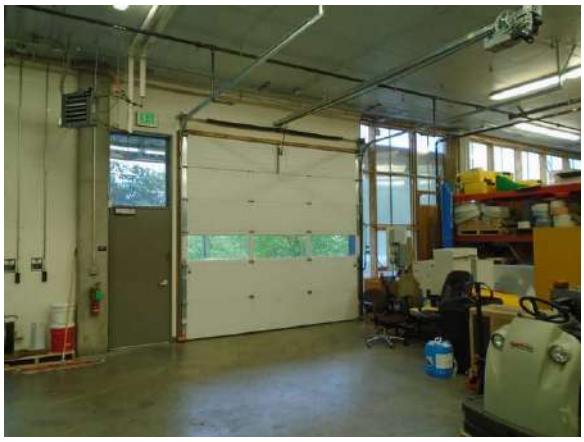
Accessible elevator control panel

Elevator

1040023e 8/23/2018

Exit signage

Second floor, room 201



1040024a 8/23/2018

Overhead door in the receiving and storage area

Room 211

1040024e 8/23/2018

Sink and water heater

Second floor, room 204

1040025a 8/23/2018
Overhead door in the receiving and storage area
Room 211

1040025e 8/23/2018
Interior lighting
Second floor, room 206

1040026a 8/23/2018
Finishes in the receiving and storage area
Room 212

1040026e 8/23/2018
Supply fan
Second floor, room 206

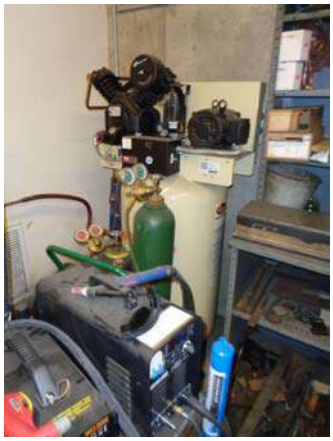
1040027a 8/23/2018
Accessible water closet and accessories
Room 201

1040027e 8/23/2018
Dust collector
First floor, room 103

1040028a 8/23/2018

Lavatory and area finishes

Room 201



1040028e 8/23/2018

Air compressor

First floor, room 103

1040029a 8/23/2018

Stair with compliant railings

Lobby 201

1040029e 8/23/2018

Ductwork and interior lighting

First floor, room 101

1040030a 8/23/2018

Exterior wall at the polycarbonate glazing system

Lobby 201

1040030e 8/23/2018

Fan coil unit

First floor, room 101

1040031a 8/23/2018
Detail at the polycarbonate glazing system
Lobby 201

1040031e 8/23/2018
Variable frequency drive
First floor, room 101

1040032a 8/23/2018
Break area casework with noncompliant sink
Room 204

1040032e 8/23/2018
Exhaust fan
First floor, room 101

1040033a 8/23/2018
Office area finishes
Suite 208

1040033e 8/23/2018
Emergency shower/eyewash station
First floor, room 101

1040034a 8/23/2018

Office area finishes

Suite 208

1040034e 8/23/2018

Air handling unit

First floor, room 101

1040035a 8/23/2018

Utility sink

Room 202A

1040035e 8/23/2018

Pump equipment

First floor, room 101

1040036a 8/23/2018

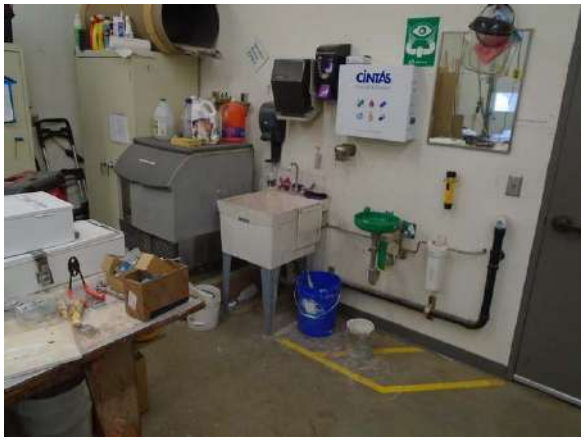
Nonaccessible drinking fountain

Suite 208

1040036e 8/23/2018

Interior lighting

First floor, room 105



1040037a 8/23/2018

Utility sink

Room 205

1040037e 8/23/2018

Interior lighting

First floor, room 117

1040038a 8/23/2018

Overhead door in the grounds maintenance area

Room 101

1040038e 8/23/2018

Exit sign and pull station

First floor, room 112

1040039a 8/23/2018

Casework and sink in the grounds maintenance area

Room 101

1040039e 8/23/2018

Digital thermostat

First floor, room T1-2

1040040a 8/23/2018

Locker area finishes

Room 112

1040040e 8/23/2018

Exhaust fan

First floor, room T1-2

1040041a 8/23/2018

Accessible water closet and lavatory

Room 115

1040041e 8/23/2018

Water heaters

First floor, room 116

1040042a 8/23/2018

Accessible shower

Room 110

1040042e 8/23/2018

Switchboard

First floor, room 108

1040043a 8/23/2018
Urinals, lavatory, screens, and area finishes
Room 111

1040043e 8/23/2018
Fire alarm panel and panelboard
First floor, room 108

1040044a 8/23/2018
Break room casework and sink
Room 109

1040044e 8/23/2018
Panelboards
First floor, room 108

1040045a 8/23/2018
Door with compliant hardware but missing required signage
Room 109

1040045e 8/23/2018
Automatic transfer switch
First floor, room 108

1040046a 8/23/2018
Stair with noncompliant low headroom
At room 109

1040046e 8/23/2018
Elevator machine and cooler
First floor, room 106

1040047a 8/23/2018
Exterior finishes and site conditions
South elevation

1040047e 8/23/2018
Elevator controller
First floor, room 106

1040048a 8/23/2018
Exterior finishes and site conditions
South elevation

1040048e 8/23/2018
Evaporator
First floor, room 106

1040049a 8/23/2018
Solar shading and exterior finishes
South elevation

1040049e 8/23/2018
Exterior lighting
Site

1040050a 8/23/2018
Exterior finishes and site conditions
West elevation

1040050e 8/23/2018
Condensing units
Site

1040051a 8/23/2018
Overhead door and shading structures
North elevation

1040051e 8/23/2018
Exterior lighting
South elevation

1040052a 8/23/2018
Exterior finishes and site conditions
North elevation

1040052e 8/23/2018
Exterior lighting
South elevation

1040053a 8/23/2018
Polycarbonate glazing wall
North elevation

1040053e 8/23/2018
Exterior lighting
South elevation

1040054a 8/23/2018
Third floor entrance
North elevation

1040054e 8/23/2018
Exterior lighting
North elevation

1040055a 8/23/2018
Entrance doors and building finishes
North elevation

1040055e 8/23/2018
Exterior lighting
Site

1040056a 8/23/2018
Exterior finishes and site conditions
East elevation

1040056e 8/23/2018
Exterior lighting
Site

1040057a 8/23/2018
Exterior finishes at the receiving area
South elevation

1040057e 8/23/2018
Exterior lighting
Site

1040058e 8/23/2018

Exterior lighting

North elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1040
Asset Name	College Services Building
Year Built or Last Energy Renovation	2006

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

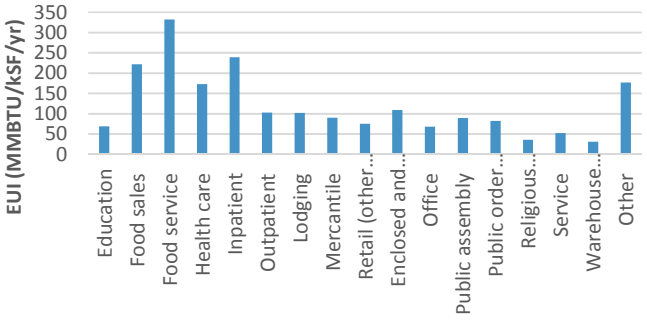
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**68.5**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48
Energy Efficient (consumes 10% to 30% less energy)	48 <= EUI <= 61.7
Similar (consumes within 10% less or 10% more energy)	61.7 < EUI < 75.4
Energy Inefficient (consumes 10% to 30% more energy)	75.4 <= EUI <= 89.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.1

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

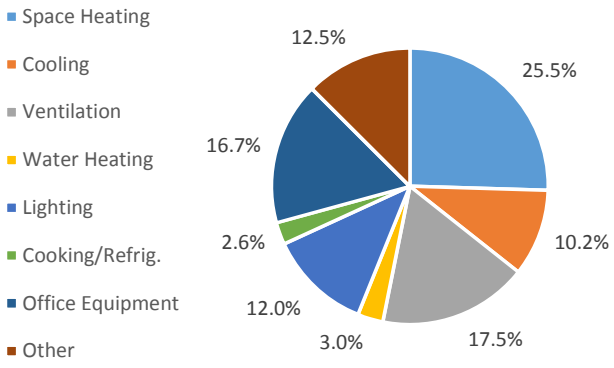


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Communication Technology
Asset 1050

Inspected August 20, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

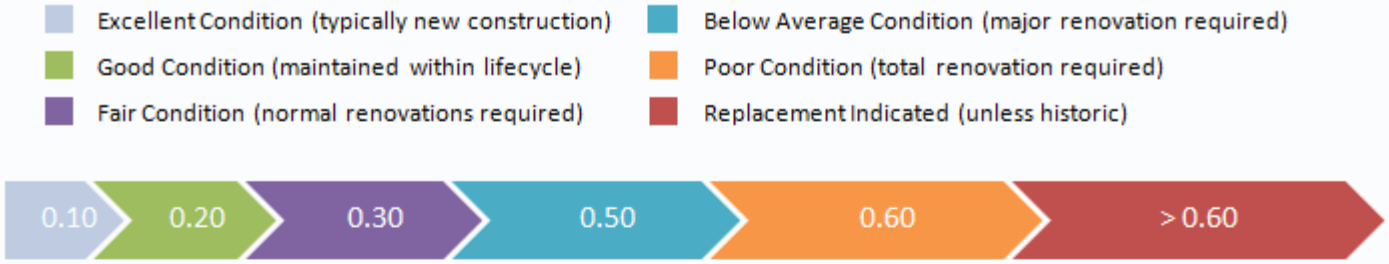
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

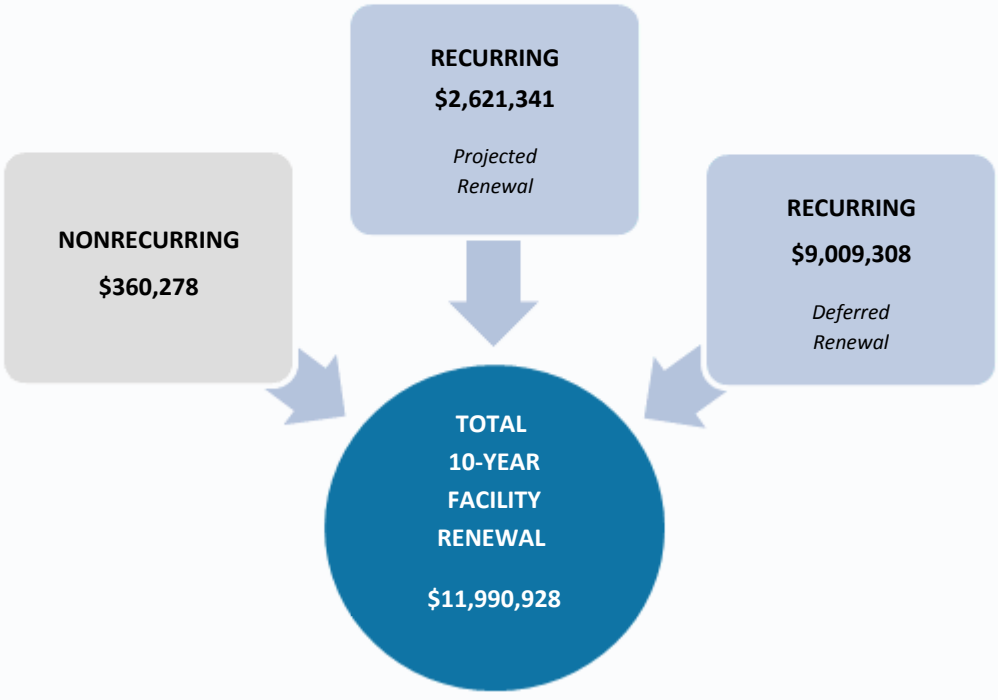
ASSET CODE	1050		
ASSET NAME	COMMUNICATION TECHNOLOGY	**CURRENT REPLACEMENT VALUE**	$31,674,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.38
YEAR BUILT	1972	**FACILITY CONDITION INDEX**	0.28
GSF	80,110	**10-YEAR $/SF**	149.68
INSPECTION DATE	08/20/2018		

FCNI Scale

The FCNI for this asset is **0.38**



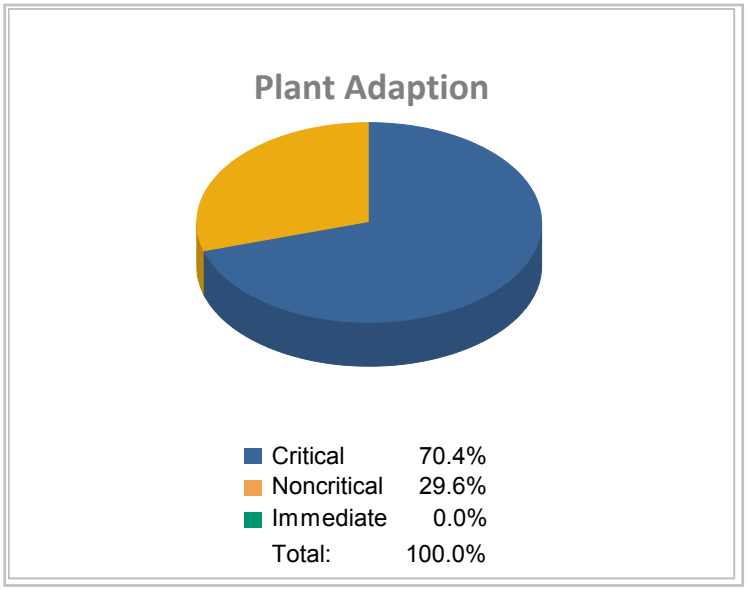
Total Facility Renewal Costs



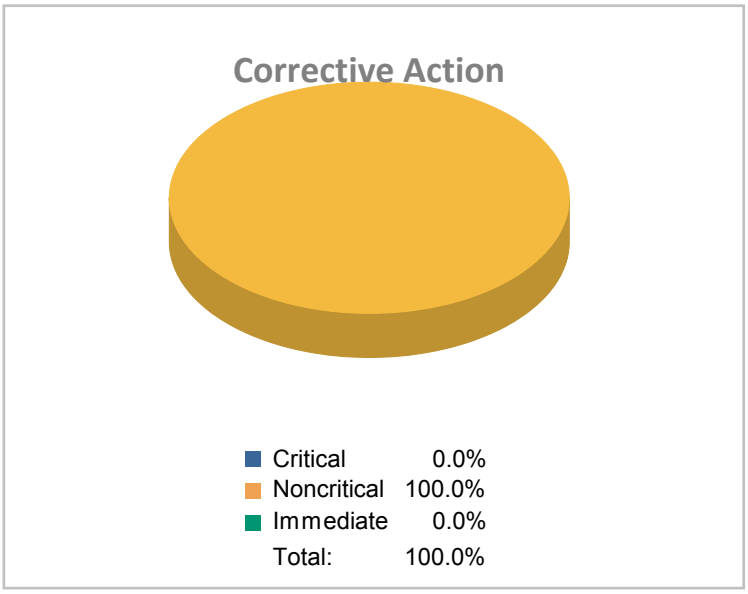
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$243,161**
3 - Noncritical	**$102,276**

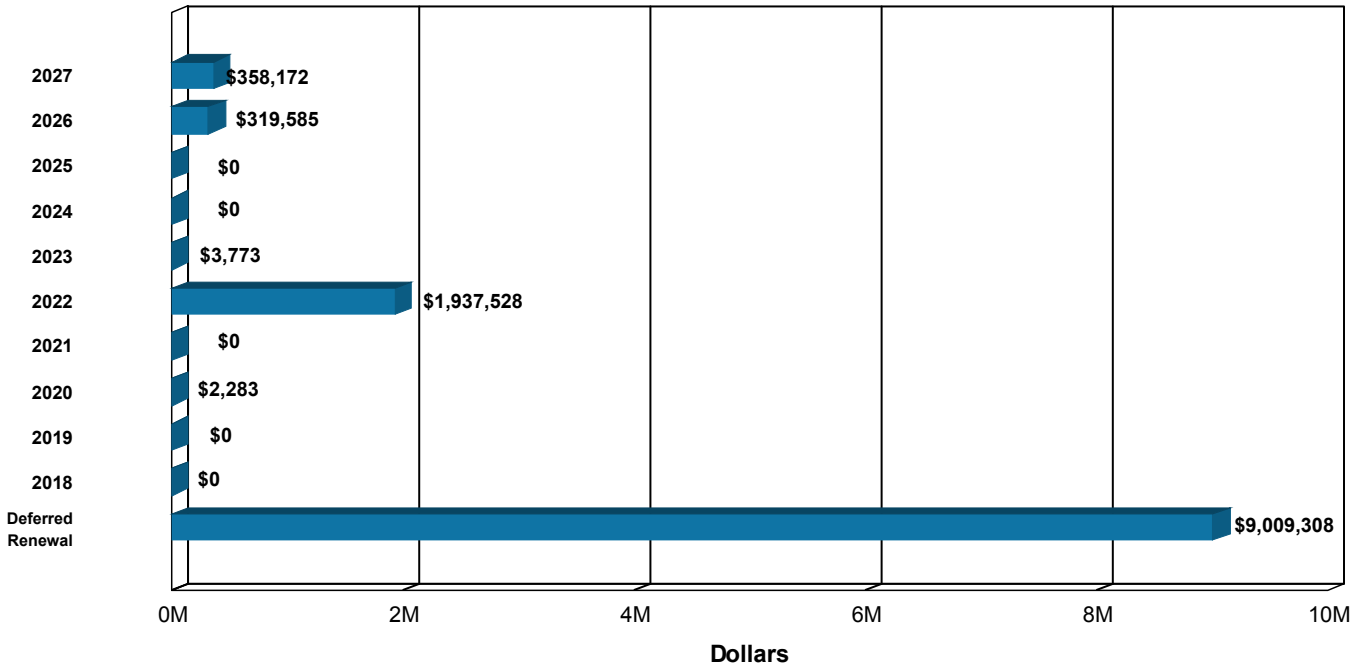


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$14,842**

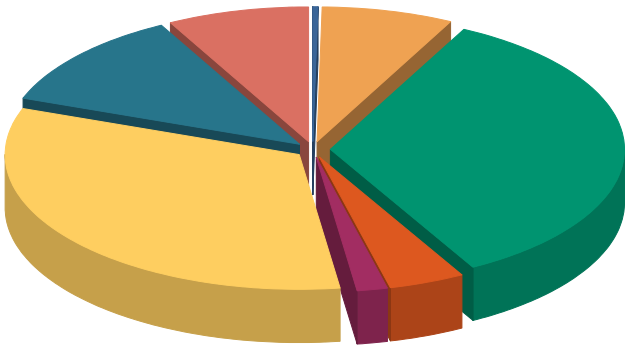


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$20,176	0%
Electrical	$892,171	7%
Exterior	$4,116,820	34%
Fire/Life Safety	$493,783	4%
Health	$189,650	2%
HVAC	$3,934,021	33%
Interiors	$1,409,644	12%
Plumbing	$934,663	8%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$11,990,928**	

ASSET SUMMARY

The Communication Technology Building is a two-story academic building on the Portland Community College, Sylvania campus. It was built in 1972 and is one of six buildings on the campus using simple Brutalist detailing of concrete post-and-beam structures that support concrete Ts. The exterior walls are brick and steel frames with wood infill and fixed glass windows. The roof is a flat, internally drained structure which, along with the intermediate floor structures, overhangs the exterior walls, creating outdoor covered walkways. This facility also includes an open shed used for art projects, a storage building, and two single-room, single-story concrete structures referred to as Bunkers. The Communication Technology building encloses 80,110 square feet of floor space and houses classrooms, labs, offices, and support spaces.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The building is located on a sloping site on the north side of the campus between the Health Technology Building and the bookstore. Pedestrian access is provided by concrete sidewalks all around the building. Parking is available in shared campus lots, and there is limited service vehicle access at the north loading dock which is shared with the bookstore. Concrete pedestrian sidewalks are cracked and displaced in various areas around this building. Replacement the cracked or damaged concrete sidewalks is recommended. The area around the art shed and storage building is enclosed with a chain link fence which appears to be in good condition. The loading dock paving is in good condition, as is the landscaping.

Exterior Structure

The main roof area is an asphaltic, multi-ply membrane with a silver reflective coating. The bunker roofs are also asphaltic membranes. The membranes are beginning to crack and show signs of age. It is recommended that they be replaced in the next few years. A fiberglass skylight structure over the interior atrium should also be replaced within the next ten years. The bunker structures have plastic skylights which are also recommended for replacement. The art shed and storage building roofs are standing-seam metal and in good condition.

The windows are single-glazed in steel frames. The steel is in good condition but the glass is beyond its normal useful life and should be replaced. The exterior doors are flush hollow metal and hollow metal with glazed panels. All of the doors are likely at the end of their anticipated lifecycle and should be refurbished or replaced. The exterior walls are brick, wood, and steel-framed glazing. The brick is in good condition. The wood also appears to be in good condition but should be refinished within the next ten years. The concrete frame of the building also composes part of the exterior finish. The concrete is in very good condition but should be cleaned and any joints cleaned and recaulked where needed.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, sheet vinyl, sealed concrete, and ceramic tile. The new tile in the all-gender restrooms should last another ten or more years. All of the other floor finishes should be replaced or renewed within the next ten years. The interior walls are painted or finished with ceramic tile. The newer ceramic tile is in good condition, but the older ceramic tile should be replaced in the next ten years. The interior walls include painted wood which is the back of the exterior wood material. This should be repainted as the exterior is being refinished. The remaining painted walls should also be repainted in the next ten years.

Ceilings are suspended acoustical tile systems, adhered acoustical tile, and painted hard surfaces. The older suspended tile systems should be replaced in the next year, while the newer systems should last another ten years. The painted ceilings should not need renewal in the next ten years. The adhered tiles are addressed in the Health section below.

Laboratory casework appears to be at or beyond its anticipated lifecycle and is recommended for replacement within the next ten years. The cabinetry in the break room and workroom appear to be in good condition and should outlast the scope of this report. The interior doors are in good condition and, other than some hardware upgrades, should outlast the scope of this report.

Accessibility

This building was built before current accessibility legislation, but has been upgraded significantly to include accessible features such as grade-level access to the main entrances with powered door openers. Inside the building there is accessible door hardware and signage, a compliant elevator control panel, and accessible restrooms. However, the configuration of the single-level drinking fountain in CT Mall 100 is a barrier to accessibility and it should be replaced with a dual-level unit and protected by alcove walls or cane guards.

Additionally, accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although the open stair in the center of the building has handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile. The stair in CT Mall 100 area leading to the mechanical room and tunnel access and the steps up into the projection booth room 203, are missing the required wall-mounted handrails and these should be provided as well.

Health

Asbestos-containing materials (ACMs) are suspected to exist in the adhered acoustical ceiling tiles in rooms 230 and 231. Prior to replacing these systems, the ACMs should be properly investigated and abated. Additionally, asbestos may be present on utility piping and will need to be abated during the next modernization.

There is an emergency eyewash station in room 125 in the event of a mishap. It appears to be in good condition and properly marked with no recommendations.

Fire/Life Safety

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The interior glazing in Art Gallery 214 is not marked as safety rated. In order to promote a safe environment for building users as well as conform to current codes, it is recommended the existing noncompliant interior glazing be removed and replaced with properly rated glass.

The egress pathways in several areas are not clearly designated by exit signs. It is recommended that a complete survey of the building be conducted and new LED-type battery backup exit signs be installed where necessary.

The facility has a modern Silent Knight fire alarm system with the main addressable fire alarm panel in a corridor leading to room M1-1. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been upgraded in 2009. Based on industry standards, the system will reach the end of its lifecycle toward the end of the next ten years and should be considered for replacement on a low priority basis.

The facility has an automatic sprinkler system for fire suppression with additional fire suppression provided by wall-mounted, manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

Emergency lighting is provided by twin-beam fixtures with internal batteries as a source of back-up power. Additionally, some light fixtures may be tied to the emergency power network. This appears to be an adequate application with no additional recommendations.

HVAC

The facility is on the campus hot and chilled water loops. Three pumps circulate the hot water as the heating medium and chilled water as the cooling medium. The pumps appear to be in adequate condition and have remaining service life beyond the scope of this report.

The facility has a built up air handling unit (AHU) to provide tempered air. The system incorporates two supply fans and two return fans. Distribution equipment consists of metal ductwork believed to contain reheat coils and the HVAC controls are a digital application. The system is believed to be original with the exception of the upgraded controls and new motors on the fans. Based on age, the HVAC system has reached the end of its service life and is recommended for replacement. The controls should also be considered for a partial replacement over the next ten years.

The facility also incorporates unitary HVAC equipment including a rooftop package unit, two split systems, and a window air conditioning unit. These were installed at different times and the window AC unit will reach end of life over the scope of this report. Replacement is recommended.

Facility exhaust is provided by rooftop centrifugal fans and utility set type fans that serve restrooms, a fume hood, and general exhaust needs. The fans were installed at different times and vary in condition. All of the original remaining equipment is aged and has reached lifecycle depletion. Additionally, one rooftop centrifugal fan will reach the end of its lifecycle within the next ten years. The remaining equipment has substantial remaining service life. Additionally, a fume hood in the laboratory area appears to be in good condition with no recommendations.

Electrical

Power is supplied to the facility at 480/277 volts via underground utilities. A main panelboard receives the power which in turn supplies various panelboards for distribution and dry-type transformers which step the power down to 120/208 volts. Additional panelboards supply the lower voltage power. The electrical distribution system appears to have been upgraded at various times and is in good condition. However, the remaining original system will reach the end of its service life within the next ten years.

The interior lighting consists of lay-in, suspended and surface-mounted with acrylic or no lenses. The fixtures are lamped with T8 fluorescent bulbs and possibly some LED bulbs. Occupancy sensors are present in select rooms for energy conservation. The interior lighting scheme appears to be well maintained and is believed to have been installed at various times. All of the new lighting has remaining service life beyond the scope of this report, but the older lighting may need to be considered for replacement within the next ten years.

The exterior lighting consists of eave-mounted fixtures with T8 fluorescent bulbs. Additionally, a pole-mounted fixture and wall-mounted LED fixture were observed. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, some of the fixtures have reached the end of their lifecycle and should be considered for replacement.

Emergency power is provided by a district source. An automatic transfer switch (ATS) provides the power for distribution. The Zenith unit was installed in 2004 and appears in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the supply fans, return fans, and exhaust fans. The VFDs are new and in excellent condition with no recommendations.

Plumbing

Domestic water is supplied through a copper piping and galvanized piping network. A backflow preventer in room 133A protects the system from cross contamination. Drain piping is believed to be cast-iron with hub-and-spigot connections and some plastic applications. The piping systems, where

they could be viewed, appear to be in adequate condition and are believed to be original. Based on industry standards, the domestic water supply piping is nearing lifecycle depletion and should be considered for upgrade.

Domestic hot water is produced by a commercial-grade electric water heater that has a tank capacity of 80 gallons. A small pump assists in circulation and a small expansion tank supports the equipment. The domestic hot water equipment appears to be well maintained and there are no recommendations.

Two air compressors are believed to be utilized for utility service. One unit is original and has reached the end of its lifecycle. The second unit dates to 2004 and is well maintained with substantial remaining service life.

Plumbing fixtures include water closets, urinals, lavatories, kitchen sinks, and utility sinks. The utility sinks and older kitchen sinks are nearing, or are beyond, their useful service lives and should be replaced. The remaining fixtures are in good condition and should serve another ten or more years.

Vertical Transportation

The facility has a hydraulic passenger elevator that serves two floors. The unit was modernized in 2003 and includes a new solid state controller manufactured by MCE. The equipment appears to be in good condition and was operating properly on the day of inspection. There are no recommendations for the system at this time.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 20, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	20,176	0	0	0	0	0	0	0	0	0	0	0	$20,176
EXTERIOR	0	0	14,842	4,045,033	0	0	0	0	56,945	0	0	0	0	0	$4,116,820
INTERIOR	0	0	0	912,257	0	0	0	0	177,802	0	0	0	319,585	0	$1,409,644
PLUMBING	0	0	0	10,675	0	0	0	0	923,988	0	0	0	0	0	$934,663
HVAC	0	0	0	3,812,315	0	0	2,283	0	115,650	3,773	0	0	0	0	$3,934,021
FIRE/LIFE SAFETY	0	59,535	76,076	0	0	0	0	0	0	0	0	0	0	358,172	$493,783
ELECTRICAL	0	0	0	229,028	0	0	0	0	663,143	0	0	0	0	0	$892,171
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	183,626	6,023	0	0	0	0	0	0	0	0	0	0	0	$189,650
SUBTOTAL	$0	$243,161	$117,117	$9,009,308	$0	$0	$2,283	$0	$1,937,528	$3,773	$0	$0	$319,585	$358,172	$11,990,928
TOTAL NONRECURRING PROJECT NEEDS			$360,278	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$11,630,649	

CURRENT REPLACEMENT VALUE	$31,674,000
FACILITY CONDITION NEEDS INDEX	0.38
FACILITY CONDITION INDEX	0.28

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
80,110	$11,990,928	$149.68

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$20,176	$0	$20,176
EXTERIOR	$14,842	$4,101,978	$4,116,820
INTERIOR	$0	$1,409,644	$1,409,644
PLUMBING	$0	$934,663	$934,663
HVAC	$0	$3,934,021	$3,934,021
FIRE/LIFE SAFETY	$135,611	$358,172	$493,783
ELECTRICAL	$0	$892,171	$892,171
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$189,650	$0	$189,650
TOTALS	**$360,278**	**$11,630,649**	**$11,990,928**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1050FS03	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	53,057
1050FS02	IMPROVE EGRESS PATHWAY DESIGNATION	D5090	2	Plant Adaption	6,478
1050HE02	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	2	Plant Adaption	183,626
1050ES01	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	14,842
1050AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	8,762
1050FS01	REPLACE NONRATED INTERIOR GLAZING	C1010	3	Plant Adaption	76,076
1050AC02	INTERIOR STAIR AND RAILING UPGRADES	C2020	3	Plant Adaption	11,414
1050HE01	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	F2020	3	Plant Adaption	6,023
				TOTAL	**$360,278**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1050	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	Deferred Renewal	15,869
1050	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				B2020	Deferred Renewal	2,895,939
1050	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	20,066
1050	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			B2030	Deferred Renewal	80,263
1050	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			BUNKERS	B3010	Deferred Renewal	19,444
1050	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	MAIN ROOF			B3010	Deferred Renewal	911,566
1050	RR23	ROOF SKYLIGHT - PLASTIC DOME			BUNKERS	B3020	Deferred Renewal	5,431
1050	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL			ATRIUM	B3020	Deferred Renewal	96,457
1050	DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			C1020	Deferred Renewal	84,325
1050	CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP			ART LABS	C1030	Deferred Renewal	154,974
1050	IW08	WALL FINISH - WOOD PANEL, STANDARD				C3010	Deferred Renewal	229,165
1050	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				C3020	Deferred Renewal	7,846
1050	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			C3020	Deferred Renewal	80,408
1050	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	139,275
1050	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			C3030	Deferred Renewal	189,881
1050	IC03	CEILING FINISH - ATTACHED ACOUSTICAL TILE				C3030	Deferred Renewal	26,384

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1050	FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL			D2010	Deferred Renewal	1,545
1050	PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UTILITY AIR	0000000484	M1-1	D2090	Deferred Renewal	9,130
1050	AH15	AIR HANDLING UNIT - INDOOR (>88 HP)	SF-2	0000000643	M1-1	D3040	Deferred Renewal	405,522
1050	AH15	AIR HANDLING UNIT - INDOOR (>88 HP)	SF-1	0000000637	M1-1	D3040	Deferred Renewal	405,522
1050	FN07	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	RF-1	0000000638	M1-2	D3040	Deferred Renewal	66,311
1050	FN07	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	RF-2	0000000639	M1-2	D3040	Deferred Renewal	66,311
1050	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000009391	ROOF	D3040	Deferred Renewal	3,773
1050	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	0000009390	ROOF	D3040	Deferred Renewal	3,773
1050	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-4	0000000318	M1-1	D3040	Deferred Renewal	11,255
1050	HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				D3040	Deferred Renewal	2,849,849
1050	LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	D5020	Deferred Renewal	1,948
1050	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	Deferred Renewal	1,251
1050	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	ORIGINAL			D5020	Deferred Renewal	225,829
1050	HU22	PTAC, DX/ HP COOL, ELEC HEAT (0.5-1.25 TON)	WINDOW AC UNIT		102	D3030	2020	2,283
1050	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2022	9,464
1050	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2022	47,481

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1050	IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	ORIGINAL			C3010	2022	177,802
1050	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				D2010	2022	6,657
1050	PS02	SUPPLY PIPING SYSTEM - CLASSROOM				D2020	2022	917,331
1050	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2022	75,521
1050	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2022	40,128
1050	SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			D5010	2022	663,143
1050	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000000633	ROOF	D3040	2023	3,773
1050	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	184,011
1050	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	135,574
1050	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2027	344,315
1050	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		M1-1	D4030	2027	13,857
							TOTAL	$11,630,649

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
8	1050ES01	EXTERIOR WALL FINISH RENEWAL	3	$14,842
		TOTAL FOR CORRECTIVE ACTION		**$14,842**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1050FS02	IMPROVE EGRESS PATHWAY DESIGNATION	2	$6,478
2	1050FS03	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$53,057
3	1050HE02	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	2	$183,626
4	1050FS01	REPLACE NONRATED INTERIOR GLAZING	3	$76,076
5	1050HE01	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	3	$6,023
6	1050AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$8,762
7	1050AC02	INTERIOR STAIR AND RAILING UPGRADES	3	$11,414
		TOTAL FOR PLANT ADAPTION		**$345,437**
		GRAND TOTAL:		**$360,278**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
6	1050AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$8,762
7	1050AC02	3	Plant Adaption	INTERIOR STAIR AND RAILING UPGRADES	$11,414
				TOTAL FOR ACCESSIBILITY	**$20,176**
8	1050ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$14,842
				TOTAL FOR EXTERIOR	**$14,842**
1	1050FS02	2	Plant Adaption	IMPROVE EGRESS PATHWAY DESIGNATION	$6,478
2	1050FS03	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$53,057
4	1050FS01	3	Plant Adaption	REPLACE NONRATED INTERIOR GLAZING	$76,076
				TOTAL FOR FIRE/LIFE SAFETY	**$135,611**
3	1050HE02	2	Plant Adaption	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	$183,626
5	1050HE01	3	Plant Adaption	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	$6,023
				TOTAL FOR HEALTH	**$189,650**
				GRAND TOTAL:	**$360,278**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

IMPROVE EGRESS PATHWAY DESIGNATION

Project Number:	1050FS02	**Category Code:** FS1A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	9/24/2018	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
IBC	1013.1	Not Applicable	Building-wide: Floor(s) 1,2

Description

The egress pathways in several areas of this building are not clearly designated by exit signs. It is recommended that a complete survey of the building be conducted and new LED-type battery backup exit signs be installed where necessary. This project includes an allowance for the installation of up to 12 new exit signs where required.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new battery pack LED exit signs, including all connections	EA	12	$165	$1,980	$222	$2,664	$4,644
Base Material/Labor Costs				**$1,980**		**$2,664**	
Indexed Material/Labor Costs				**$1,968**		**$2,685**	**$4,653**
Construction Mark Up at 20.0%							**$931**
Original Construction Cost							**$5,584**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,584**
Professional Fees at 16.0%							**$893**
TOTAL PROJECT COST							**$6,478**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1050FS03	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/30/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	48	$304	$14,592	$488	$23,424	$38,016
Base Material/Labor Costs				**$14,592**		**$23,424**	
Indexed Material/Labor Costs				**$14,504**		**$23,611**	**$38,116**
Construction Mark Up at 20.0%							**$7,623**
Original Construction Cost							**$45,739**
Date of Original Estimate: 9/30/2018						**Inflation**	**$0**
Current Year Construction Cost							**$45,739**
Professional Fees at 16.0%							**$7,318**
TOTAL PROJECT COST							**$53,057**

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	1050HE02	**Category Code:** HE6B	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	11/26/2018	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1,2
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There may be asbestos existent on utility piping. Prior to future renovation of these systems, this asbestos, if present, will have to be properly removed from the utility networks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from utility piping	SF	80,110	$0.23	$18,425	$0.59	$47,265	$65,690
Plumbing system - abate asbestos from supply piping network	SF	80,110	$0.23	$18,425	$0.59	$47,265	$65,690
Base Material/Labor Costs				**$36,851**		**$94,530**	
Indexed Material/Labor Costs				**$36,629**		**$95,286**	**$131,916**
Construction Mark Up at 20.0%							**$26,383**
Original Construction Cost							**$158,299**
Date of Original Estimate: 11/26/2018						**Inflation**	**$0**
Current Year Construction Cost							**$158,299**
Professional Fees at 16.0%							**$25,328**
TOTAL PROJECT COST							**$183,626**

All costs shown as Present Value

REPLACE NONRATED INTERIOR GLAZING

Project Number:	1050FS01	**Category Code:** FS5C	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	9/24/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	2406.4.1	Not Applicable	Item Only: Floor(s) 2

Description

The interior glazing in Art Gallery 214 is not marked as safety rated. In order to promote a safe environment for building users as well as conform to current codes, it is recommended the noncompliant interior glazing be removed and replaced with properly rated glass.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace nonrated interior glazing with safety-rated glazing in existing frame	SF	370	$106	$39,239	$41.96	$15,525	$54,764
Base Material/Labor Costs				**$39,239**		**$15,525**	
Indexed Material/Labor Costs				**$39,003**		**$15,649**	**$54,652**
Construction Mark Up at 20.0%							**$10,930**
Original Construction Cost							**$65,583**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$65,583**
Professional Fees at 16.0%							**$10,493**
TOTAL PROJECT COST							**$76,076**

All costs shown as Present Value

ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS

Project Number:	1050HE01	**Category Code:** HE6F	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	9/24/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 2
OSHA	29 CFR 1910.1001, 1926.1101		

Description

Asbestos-containing materials (ACMs) are suspected to exist in the adhered acoustical ceiling tiles in rooms 230 and 231. Prior to replacing these systems, the ACMs should be properly investigated and abated. This project provides a budget for the abatement of ACMs prior to the renewal of the affected finishes.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Typical asbestos abatement of attached ceiling finishes	SF	3,410	$0.08	$273	$1.18	$4,024	$4,297
Base Material/Labor Costs				**$273**		**$4,024**	
Indexed Material/Labor Costs				**$271**		**$4,056**	**$4,327**
Construction Mark Up at 20.0%							**$865**
Original Construction Cost							**$5,193**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,193**
Professional Fees at 16.0%							**$831**
TOTAL PROJECT COST							**$6,023**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1050AC01	**Category Code:** AC3F	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountain is a barrier to accessibility and it should be replaced with a dual-level unit and protected by alcove walls or cane guards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$2,481**		**$3,798**	
			Indexed Material/Labor Costs	**$2,467**		**$3,828**	**$6,295**
					Construction Mark Up at 20.0%		**$1,259**
					Original Construction Cost		**$7,553**
Date of Original Estimate: 9/24/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$7,553**
					Professional Fees at 16.0%		**$1,209**
					TOTAL PROJECT COST		**$8,762**

All costs shown as Present Value

INTERIOR STAIR AND RAILING UPGRADES

Project Number:	1050AC02	**Category Code:** AC3B	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although the open stair in the center of the building has handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile. The stair in the CT Mall 100 area leading to the mechanical room and tunnel access, and the steps up into the projection booth, room 203, are missing the required wall-mounted handrails and these should be provided as well.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	4	$729	$2,918	$663	$2,653	$5,570
Wall-mounted handrail system, painted	LF	24	$64.33	$1,544	$45.09	$1,082	$2,626
Base Material/Labor Costs				**$4,462**		**$3,735**	
Indexed Material/Labor Costs				**$4,435**		**$3,765**	**$8,200**
Construction Mark Up at 20.0%							**$1,640**
Original Construction Cost							**$9,840**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$9,840**
Professional Fees at 16.0%							**$1,574**
TOTAL PROJECT COST							**$11,414**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	1050ES01	**Category Code:** ES2B	
Priority Sequence:	8		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	9/24/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The exterior wall systems include both wood plank and wood grille finishes. The wood appears to be in generally good condition but should be repainted within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	4,130	$0.64	$2,643	$1.93	$7,971	$10,614
Base Material/Labor Costs				**$2,643**		**$7,971**	
Indexed Material/Labor Costs				**$2,627**		**$8,035**	**$10,662**
Construction Mark Up at 20.0%							**$2,132**
Original Construction Cost							**$12,794**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$12,794**
Professional Fees at 16.0%							**$2,047**
TOTAL PROJECT COST							**$14,842**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				4,130	SF	$56,818	1972	30	30	2032
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				6,890	SF	$15,869	1972	30	15	DR
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				11,810	SF	$2,895,939	1972	40	5	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			40	LEAF	$80,263	1972	40	5	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			10	LEAF	$20,066	1972	40	5	DR
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			8	EA	$54,162	2010	20		2030
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				10	EA	$9,464	2010	12		2022
DR36	DOOR PANIC HARDWARE, EXTERIOR				40	EA	$47,481	2010	12		2022
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	MAIN ROOF			43,600	SF	$911,566	1972	30	15	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			BUNKERS	930	SF	$19,444	1972	30	15	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			KILN SHED	1,600	SF	$27,338	2010	40		2050
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM			STORAGE BLDG	720	SF	$12,302	2010	40		2050
RR23	ROOF SKYLIGHT - PLASTIC DOME			BUNKERS	30	SF	$5,431	1972	20	25	DR
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL			ATRIUM	1,600	SF	$96,457	1972	20	25	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			112	LEAF	$247,681	1972	60		2032

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	PANIC HDW			8	LEAF	$17,692	1972	60		2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			48	LEAF	$176,090	1972	60		2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			2	LEAF	$7,337	1972	60		2032
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			112	EA	$84,325	1972	35	10	DR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			2	EA	$1,506	2010	35		2045
DR26	DOOR PANIC HARDWARE, INTERIOR	NONRATED DRS			8	EA	$9,496	2010	30		2040
DR26	DOOR PANIC HARDWARE, INTERIOR	RATED DRS			48	EA	$56,974	2010	30		2040
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				32	LF	$17,948	2010	30		2040
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP			ART LABS	4,010	SF	$154,974	1972	40	5	DR
IW01	WALL FINISH - APPLIED, STANDARD				65,930	SF	$184,011	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	ORIGINAL			4,390	SF	$177,802	1972	60	-10	2022
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			ALL GENDER RRS	1,100	SF	$44,552	2015	60		2075
IW08	WALL FINISH - WOOD PANEL, STANDARD				10,990	SF	$229,165	1972	40	5	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				11,380	SF	$135,574	2014	12		2026
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				1,140	SF	$7,846	1972	20	25	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			2,280	SF	$80,408	1972	40	5	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			ALL GENDER RRS	570	SF	$20,102	2015	40		2055
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				39,820	SF	$139,275	1972	10	35	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			17,060	SF	$189,881	1972	45		DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2014 UPGRADE			17,060	SF	$189,881	2014	45		2059
IC03	CEILING FINISH - ATTACHED ACOUSTICAL TILE				3,410	SF	$26,384	1972	45		DR
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				8,530	SF	$23,807	2014	24		2038
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MCE	0000004412	100B	1	EA	$257,984	2003	25		2028
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG			MAIN RRS	11	EA	$14,863	2010	35		2045
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG			ALL GENDER RRS	4	EA	$5,405	2015	35		2050
FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL			2	EA	$1,545	1972	20	25	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2010 INSTALL			1	EA	$773	2010	20		2030
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				4	EA	$6,657	1972	50		2022
FX10	PLUMBING FIXTURE - URINAL				9	EA	$9,708	2010	35		2045
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS			MAIN RRS	10	EA	$16,950	2010	35		2045
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS			ALL GENDER RRS	4	EA	$6,780	2015	35		2050
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			125	1	EA	$1,080	2012	35		2047

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BF01	BACKFLOW PREVENTER (<=1 INCH)	AMES		133A	1	EA	$1,258	2008	20		2028
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				80,110	SF	$917,331	1972	50		2022
TK06	EXPANSION TANK, STL PT (<20 GAL)	WATTS	0000005599	M1-1	10	GAL	$1,008	2013	30		2043
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	BRADFORD WHITE	0000005598	M1-1	80	GAL	$12,774	2013	30		2043
PD02	DRAIN PIPING SYSTEM - CLASSROOM				80,110	SF	$1,376,315	1972	60		2032
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UTILITY AIR	0000000484	M1-1	4	HP	$9,130	1972	25	20	DR
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	UTILITY AIR		140	15	HP	$29,024	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004654	ROOF	2	TON	$2,473	2016	25		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FUJITSU	0000000479	BLDG EXT	2	TON	$4,580	2010	25		2035
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005866	216H	2	TON	$2,510	2016	30		2046
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	FUJITSU			2	TON	$4,648	2010	30		2040
HU22	PTAC, DX/ HP COOL, ELEC HEAT (0.5-1.25 TON)	WINDOW AC UNIT		102	1	TON	$2,283	1995	25		2020
AH15	AIR HANDLING UNIT - INDOOR (>88 HP)	SF-1	0000000637	M1-1	100	HP	$405,522	1972	35	10	DR
AH15	AIR HANDLING UNIT - INDOOR (>88 HP)	SF-2	0000000643	M1-1	100	HP	$405,522	1972	35		DR
FN07	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	RF-1	0000000638	M1-2	40	HP	$66,311	1972	35	10	DR
FN07	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	RF-2	0000000639	M1-2	40	HP	$66,311	1972	35	10	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000005616	ROOF	1	EA	$3,773	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000009107	ROOF	1	EA	$3,773	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000009106	ROOF	1	EA	$3,773	2013	25		2038
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000000633	ROOF	1	EA	$3,773	1998	25		2023
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000009391	ROOF	1	EA	$3,773	1972	25	20	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	0000009390	ROOF	1	EA	$3,773	1972	25	20	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	COOK	0000000478	CT-3	1	HP	$1,321	1998	35		2033
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-3	0000000632	ROOF	1	HP	$5,466	1998	40		2038
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-4	0000000318	M1-1	5	HP	$11,255	1972	40	5	DR
HD01	HOOD, FUME	HANSON	0000005332	125	6	LF	$14,641	1998	35		2033
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				80,110	SF	$2,849,849	1972	45		DR
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009403	M1-1	1	HP	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)	HHW	0000000319	M1-1	5	HP	$8,463	1998	30		2028
PH01	PUMP - ELECTRIC (<=10 HP)	HHW	0000000320	M1-1	5	HP	$8,463	1998	30		2028
PH01	PUMP - ELECTRIC (<=10 HP)	HHW		M1-2	1	HP	$1,693	2006	30		2036
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU-1	0000003971	ROOF	5	TON	$21,204	2011	25		2036

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				80,110	SF	$271,394	2012	20		2032
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				80,110	SF	$75,521	2012	10		2022
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				80,110	SF	$40,128	2012	10		2022
FS01	FIRE SPRINKLER SYSTEM - WET				80,110	SF	$1,083,779	1972	80		2052
FA01	FIRE ALARM SYSTEM - DEVICES				80,110	SF	$344,315	2009	18		2027
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		M1-1	1	EA	$13,857	2009	18		2027
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL			26,704	SF	$663,143	1972	50		2022
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	2004 UPGRADE			26,703	SF	$663,118	2004	50		2054
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	2016 UPGRADE			26,703	SF	$663,118	2016	50		2066
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)	4MDP	0000005765	E1-1	800	AMP	$8,741	2016	40		2056
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	0000007739	230A	1	HP	$727	2016	15		2031
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-3	0000007740	230A	1	HP	$727	2016	15		2031
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	RF-1	0000005600	M1-2	40	HP	$12,316	2016	18		2034
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	RF-2	0000005601	M1-2	40	HP	$12,316	2016	18		2034
VF11	VARIABLE FREQUENCY DRIVE (75-100 HP)	SF-1	0000005596	M1-1	100	HP	$27,041	2016	21		2037
VF11	VARIABLE FREQUENCY DRIVE (75-100 HP)	SF-2	0000005597	M1-1	100	HP	$27,041	2016	21		2037

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)			2ND FL	18	EA	$9,154	2008	20		2028
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)			1ST FL	14	EA	$7,120	2008	20		2028
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			1ST FL	1	EA	$772	2016	20		2036
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	1	EA	$1,948	1972	40	5	DR
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	1	EA	$1,251	1972	20	25	DR
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	ORIGINAL			20,110	SF	$225,829	1972	20	25	DR
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	2008 UPGRADE			30,000	SF	$336,890	2008	20		2028
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	2013 UPGRADE			30,000	SF	$336,890	2013	20		2033
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				30,000	SF	$68,897	2015	20		2035
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ZENITH	0000000327	E1-2	80	AMP	$4,422	2004	25		2029
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT			KILN AREA	200	LF	$9,680	2010	30		2040
						Grand Total:	**$17,960,870**				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		6,890	SF	$15,869	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM		11,810	SF	$2,895,939	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW	40	LEAF	$80,263	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	10	LEAF	$20,066	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	MAIN ROOF	43,600	SF	$911,566	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		930	SF	$19,444	DR
B3020	ROOF SKYLIGHT - PLASTIC DOME		30	SF	$5,431	DR
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL		1,600	SF	$96,457	DR
C1020	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS	112	EA	$84,325	DR
C1030	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP		4,010	SF	$154,974	DR
C3010	WALL FINISH - WOOD PANEL, STANDARD		10,990	SF	$229,165	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		1,140	SF	$7,846	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL	2,280	SF	$80,408	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		39,820	SF	$139,275	DR
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL	17,060	SF	$189,881	DR
C3030	CEILING FINISH - ATTACHED ACOUSTICAL TILE		3,410	SF	$26,384	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL	2	EA	$1,545	DR
D2090	AIR COMPRESSOR - UTILITY (< =5 HP)	UTILITY AIR	4	HP	$9,130	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	HVAC DISTRIBUTION NETWORKS - CLASSROOM		80,110	SF	$2,849,849	DR
D3040	AIR HANDLING UNIT - INDOOR (>88 HP)	SF-1	100	HP	$405,522	DR
D3040	AIR HANDLING UNIT - INDOOR (>88 HP)	SF-2	100	HP	$405,522	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	RF-1	40	HP	$66,311	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	RF-2	40	HP	$66,311	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-6	1	EA	$3,773	DR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	EF-4	5	HP	$11,255	DR
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		1	EA	$1,251	DR
D5020	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)		1	EA	$1,948	DR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	ORIGINAL	20,110	SF	$225,829	DR
		TOTAL DEFERRED RENEWAL COST			**$9,009,308**	

No Projected Component Replacement Cost for Asset No. 1050 for 2018

No Projected Component Replacement Cost for Asset No. 1050 for 2019

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3030	PTAC, DX/ HP COOL, ELEC HEAT (0.5-1.25 TON)	WINDOW AC UNIT	1	TON	$2,422	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$2,422	

No Projected Component Replacement Cost for Asset No. 1050 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	ORIGINAL	4,390	SF	$200,118	2022
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		10	EA	$10,652	2022
B2030	DOOR PANIC HARDWARE, EXTERIOR		40	EA	$53,440	2022
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY		4	EA	$7,493	2022
D5010	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	ORIGINAL	26,704	SF	$746,373	2022
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		80,110	SF	$45,165	2022
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		80,110	SF	$85,000	2022
D2020	SUPPLY PIPING SYSTEM - CLASSROOM		80,110	SF	$1,032,464	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$2,180,705	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	1	EA	$4,374	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$4,374	

No Projected Component Replacement Cost for Asset No. 1050 for 2024

No Projected Component Replacement Cost for Asset No. 1050 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		11,380	SF	$171,741	2026
C3010	WALL FINISH - APPLIED, STANDARD		65,930	SF	$233,100	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$404,840	

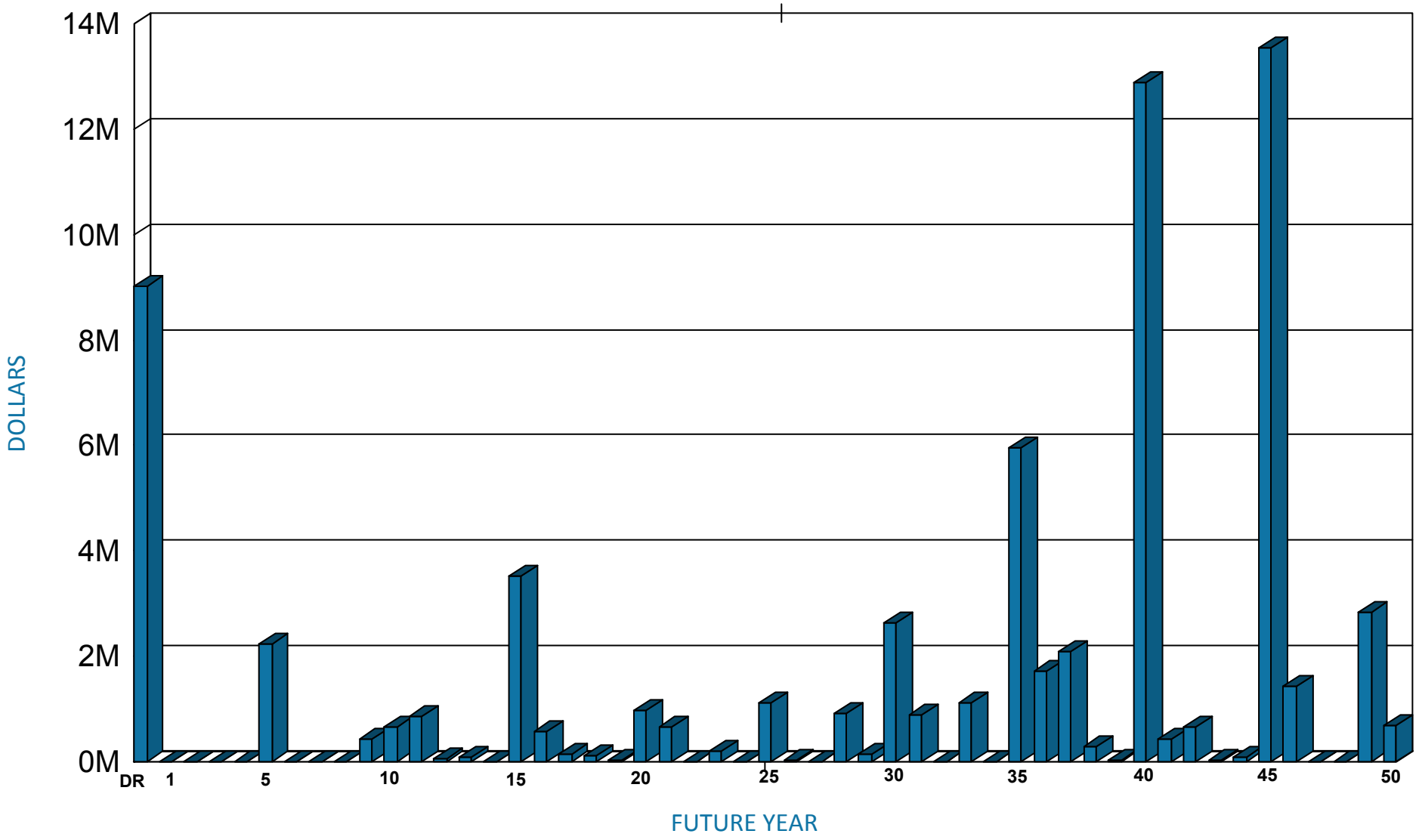
2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$18,080	2027
D4030	FIRE ALARM SYSTEM - DEVICES		80,110	SF	$449,253	2027

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

	2027	**PROJECTED COMPONENT REPLACEMENT COST**	**$467,334**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



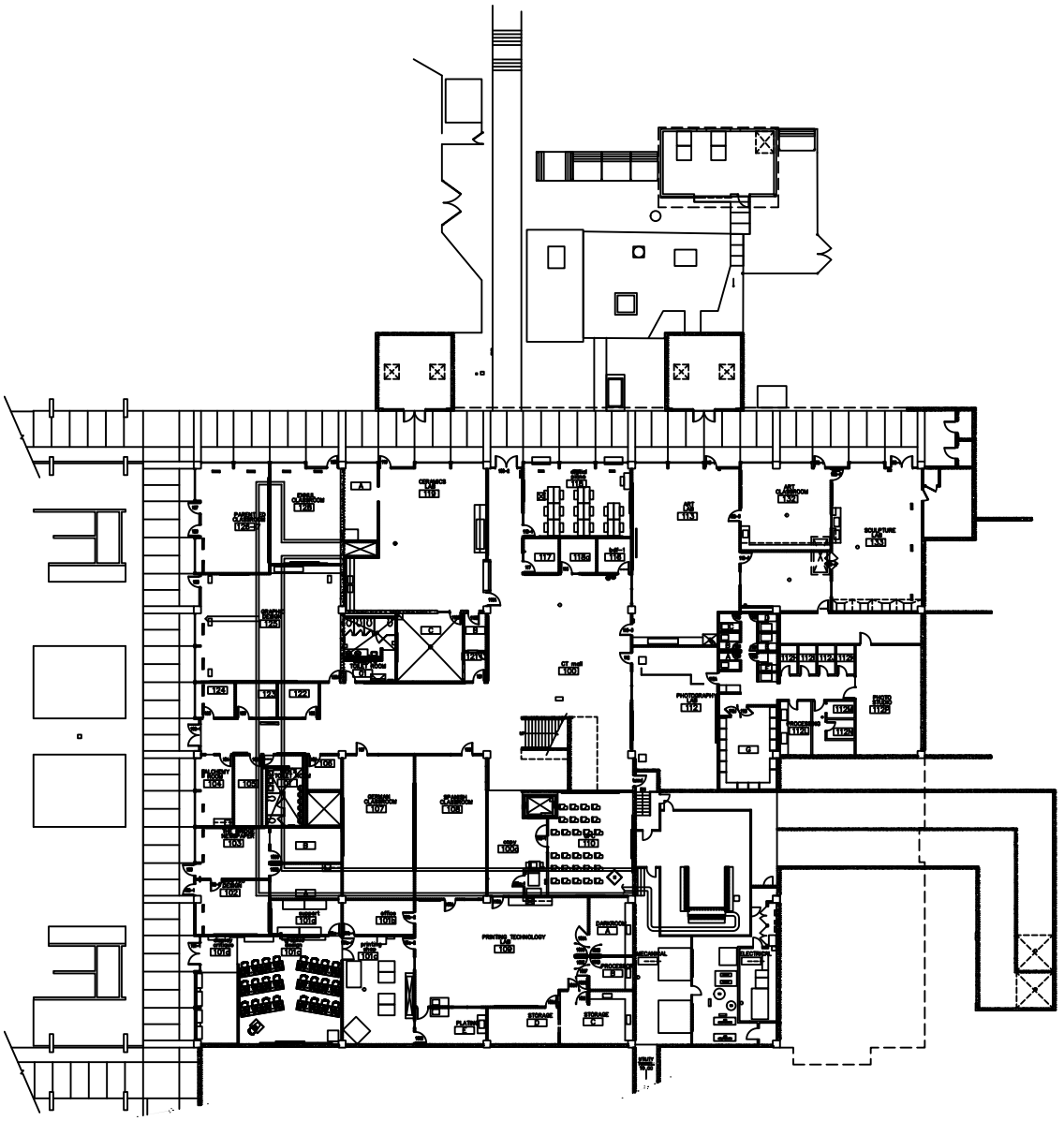
Average Annual Renewal Cost per SF $7.77

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



ES01 FS02

AC01 AC02 HE02

SCALE: 1"=30'-0"

COMMUNICATION TECHNOLOGY

BLDG NO. 1050

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

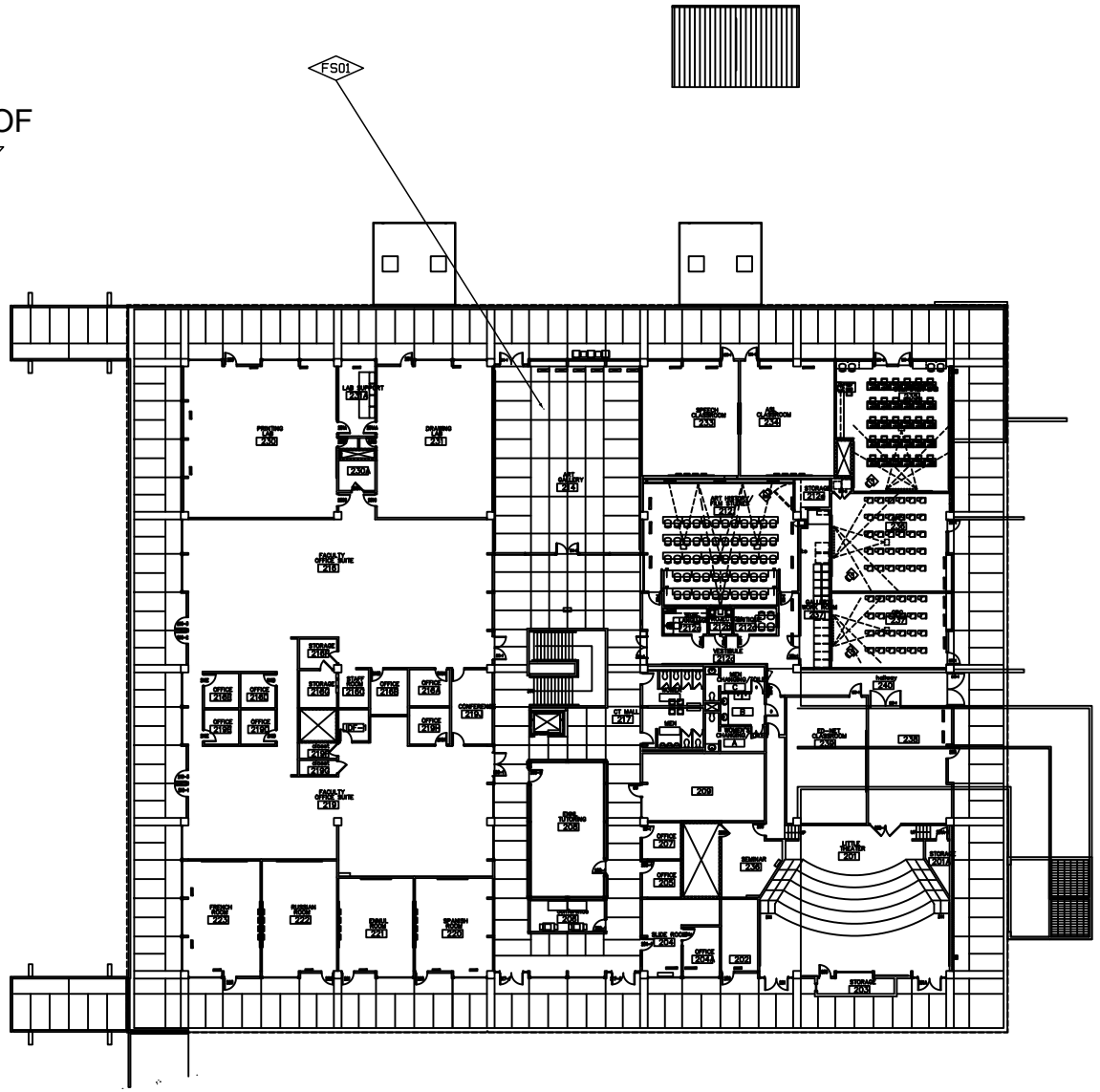
FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF

FS03



AC01 AC02 HE01 HE02

COMMUNICATION TECHNOLOGY

BLDG NO. 1050

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
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PROJECT NUMBER APPLIES TO ONE ROOM ONLY

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PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1050001a 8/20/2018

Outdoor walkway

North elevation

1050001e 8/20/2018

HVAC package unit

Roof

1050002a 8/20/2018

Outdoor walkway between CT and the Bookstore

East elevation

1050002e 8/20/2018

HVAC package unit

Roof

1050003a 8/20/2018

Typical classroom entrances, glazing, and wood wall finishes

North elevation

1050003e 8/20/2018

Exhaust fan

Roof

1050004a 8/20/2018
Bunker outbuilding roof and skylight
North elevation

1050004e 8/20/2018
Exhaust fan
Roof

1050005a 8/20/2018
Kiln area shed structure
North elevation

1050005e 8/20/2018
Exhaust fan
Roof

1050006a 8/20/2018
Typical concrete T-building structure
West elevation

1050006e 8/20/2018
Exhaust fan
Roof

1050007a 8/20/2018
Common area entrance
South elevation

1050007e 8/20/2018
Condensing unit
Roof

1050008a 8/20/2018
Loading dock and exterior finishes
North elevation

1050008e 8/20/2018
Exhaust fan
Roof

1050009a 8/20/2018
Bunker outbuilding exterior finish and entrance doors
North elevation

1050009e 8/20/2018
Interior lighting
Second floor, room 219

1050010a 8/20/2018

Kiln shed structure

North elevation

1050010e 8/20/2018

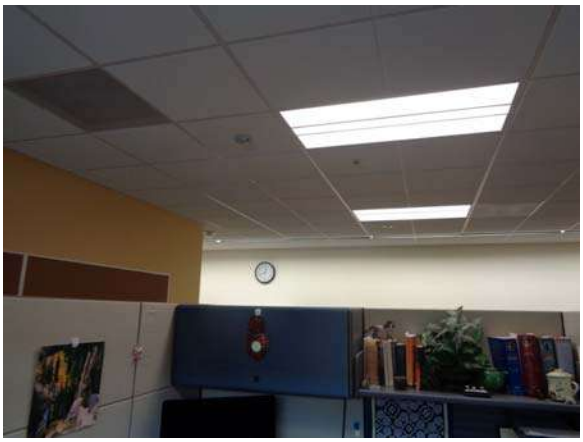
Sprinkler head and interior lighting

Second floor, room 219

1050011a 8/20/2018

Ground floor walkway at the bunker structure

North elevation



1050011e 8/20/2018

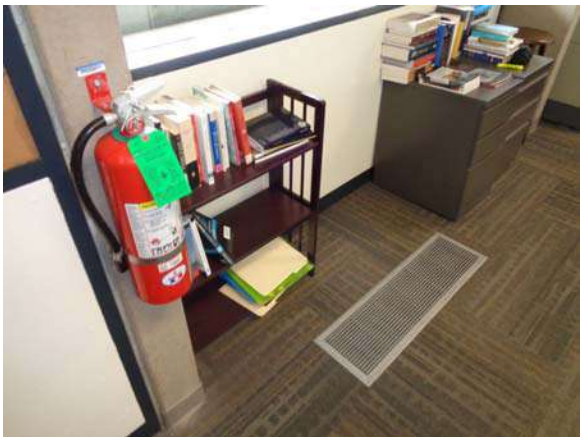
Occupancy sensor

Second floor, room 219

1050012a 8/20/2018

Ground floor main entrance

North elevation



1050012e 8/20/2018

Fire extinguisher

Second floor, room 219

1050013a 8/20/2018
Exterior finishes and site conditions
South elevation

1050013e 8/20/2018
Interior lighting
Second floor, room 216

1050014a 8/20/2018
ADA-compliant elevator control panel
Elevator

1050014e 8/20/2018
Panelboard
Second floor, room 230A

1050015a 8/20/2018
Roof access hatch
Roof

1050015e 8/20/2018
Variable frequency drives
Second floor, room 230A

1050016a 8/20/2018

Typical roof drain

Roof

1050016e 8/20/2018

Evaporator

Second floor, room 216H

1050017a 8/20/2018

Deterioration of roof membrane

Roof

1050017e 8/20/2018

Panelboards

Second floor, room 216G

1050018a 8/20/2018

Deterioration of roof membrane

Roof

1050018e 8/20/2018

Panelboards

Second floor, room 216G

1050019a 8/20/2018

Damaged cap flashing and roof edge without fall protection

Roof

1050019e 8/20/2018

Transformer

Second floor, room 216G

1050020a 8/20/2018

Skylight structure

Roof

1050020e 8/20/2018

Sink

Second floor, room 216B

1050021a 8/20/2018

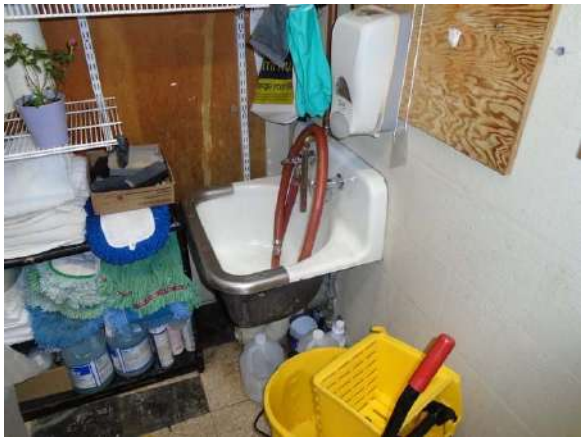
Skylight structure

Roof

1050021e 8/20/2018

Piping

Second floor, room 216B



1050022a 8/20/2018

Utility sink

Room 219F

1050022e 8/20/2018

Interior lighting

Second floor, corridor C2-01

1050023a 8/20/2018

Office area finishes

Room 219

1050023e 8/20/2018

Interior lighting

Second floor, room 214

1050024a 8/20/2018

Exit door hardware and signage

Room 219

1050024e 8/20/2018

Strobe and interior lighting

Second floor, room T2-6

1050025a 8/20/2018
Typical wood exterior wall and glazing system
Room 219

1050025e 8/20/2018
Piping
Second floor, room T2-6

1050026a 8/20/2018
Office area finishes
Room 219

1050026e 8/20/2018
Piping
Second floor, room T2-6

1050027a 8/20/2018
Casework and accessible sink
Room 219

1050027e 8/20/2018
Interior lighting
Second floor, room 212

1050028a 8/20/2018

Casework and accessible sink

Room 219

1050028e 8/20/2018

Interior lighting

Second floor, room 237

1050029a 8/20/2018

Interior wood walls and powered door opener at the men's restroom

Second floor

1050029e 8/20/2018

Interior lighting

Second floor, room 235

1050030a 8/20/2018

Lavatories and area finishes

Men's restroom

1050030e 8/20/2018

Fire extinguisher

Second floor, room 235

1050031a 8/20/2018

Urinals and area finishes

Men's restroom

1050031e 8/20/2018

Plastic drain piping

Second floor, room 231

1050032a 8/20/2018

Accessible water closet with accessories and finishes

Men's restroom

1050032e 8/20/2018

Wash basin

Second floor, room 231

1050033a 8/20/2018

Accessible water closet with accessories and finishes

Women's restroom

1050033e 8/20/2018

Interior lighting

Second floor, room 230

1050034a 8/20/2018

Lavatories and area finishes

Women's restroom

1050034e 8/20/2018

Wash basin

Second floor, room 230

1050035a 8/20/2018

Tiered classroom with compliant handrails

Room 212

1050035e 8/20/2018

Interior lighting

First floor, room 126

1050036a 8/20/2018

Water closet and accessories

All-gender restroom near room 212

1050036e 8/20/2018

Piping

First floor, room 126

1050037a 8/20/2018
Lavatory and accessories
All-gender restroom near room 212

1050037e 8/20/2018
Fume hood
First floor, room 125

1050038a 8/20/2018
Building exit doors, hardware, and signage
Second floor

1050038e 8/20/2018
Eyewash station
First floor, room 125

1050039a 8/20/2018
Projection room steps without required handrails
Room 201

1050039e 8/20/2018
Interior lighting
First floor, room 105

1050040a 8/20/2018

Typical classroom finishes

Room 237

1050040e 8/20/2018

Interior lighting

First floor, room HT3-2

1050041a 8/20/2018

Typical lab casework

Room 231

1050041e 8/20/2018

Strobe and sprinkler head

First floor, room HT3-2

1050042a 8/20/2018

Casework and sink

Room 109

1050042e 8/20/2018

Interior lighting

First floor, room 107

1050043a 8/20/2018

Classroom finishes

Room 101C

1050043e 8/20/2018

Interior lighting

First floor, room 109

1050044a 8/20/2018

Casework and area finishes

Room 100C

1050044e 8/20/2018

Interior lighting

First floor, room 109A

1050045a 8/20/2018

Noncompliant drinking fountain

CT Mall 100

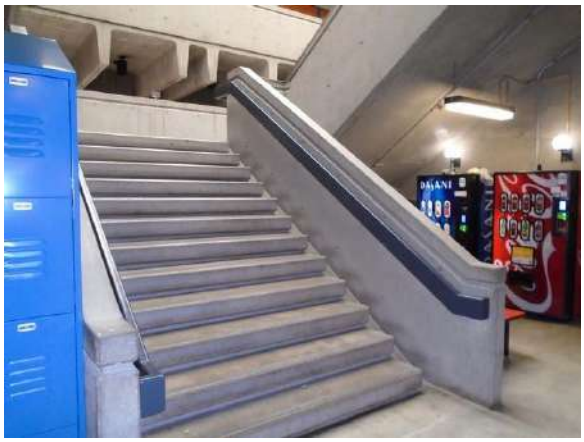
1050045e 8/20/2018

Hood and interior lighting

First floor, room 109E

1050046a 8/20/2018
Common area open stair and area finishes
CT Mall 100

1050046e 8/20/2018
Panelboard
First floor, room 101C



1050047a 8/20/2018
Common area stair with noncompliant handrails
CT Mall 100

1050047e 8/20/2018
Occupancy sensor and Interior lighting
First floor, room 101

1050048a 8/20/2018
Fence at the kiln shed and storage building
North exterior

1050048e 8/20/2018
Elevator controller
First floor, room 100B

1050049a 8/20/2018

Sliding door

Storage shed

1050049e 8/20/2018

Elevator machine

First floor, room 100B

1050050a 8/20/2018

Shed exterior finishes and sliding door

Storage shed

1050050e 8/20/2018

Electrical disconnect switch

First floor, room 100B

1050051a 8/20/2018

Wood shed

North exterior

1050051e 8/20/2018

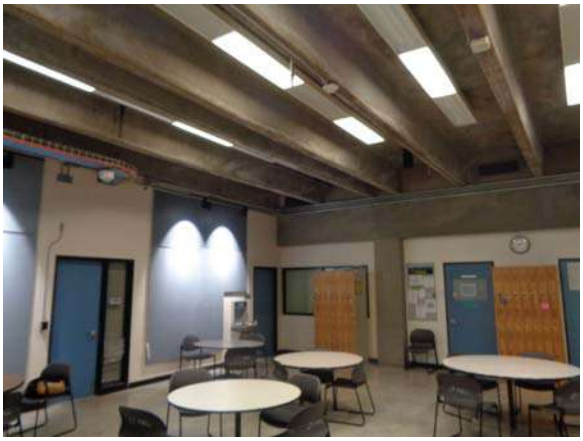
Interior lighting

First floor, room 110

1050052a 8/20/2018

Kiln shed

North elevation



1050052e 8/20/2018

Interior lighting

First floor, room CT-01

1050053a 8/20/2018

Bunker ceiling and skylight

East bunker

1050053e 8/20/2018

Annunciator

First floor, room CT-01

1050054a 8/20/2018

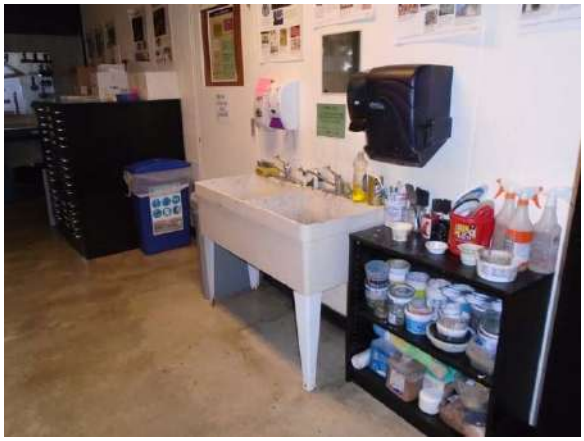
Bunker interior with evidence of water intrusion

East bunker

1050054e 8/20/2018

Interior lighting

First floor, room 140



1050055a 8/20/2018
Utility sink and area finishes
Room 112

1050055e 8/20/2018
Interior lighting
First floor, room 140

1050056a 8/20/2018
Typical accessible room signage
Room 112

1050056e 8/20/2018
Exterior lighting
Storage shed

1050057a 8/20/2018
Casework and area finishes
First floor

1050057e 8/20/2018
Exhaust fan
First floor, room CT-3

1050058a 8/20/2018
Mechanical access stair without required handrails
Mechanical area

1050058e 8/20/2018
Unit heater
First floor, room CT-3

1050059e 8/20/2018
Interior lighting
First floor, room CT-3

1050060e 8/20/2018
Air compressor
First floor, room CT-3A

1050061e 8/20/2018
Interior lighting
First floor, room CT-3A

1050062e 8/20/2018
Interior lighting
First floor, room 135

1050063e 8/20/2018

Interior lighting

First floor, room 132

1050064e 8/20/2018

Interior lighting

First floor, room 133

1050065e 8/20/2018

Backflow preventer

First floor, room 133A

1050066e 8/20/2018

Interior lighting

First floor, room 112C

1050067e 8/20/2018

Variable frequency drives

First floor, room M1-01

1050068e 8/20/2018

Supply fans

First floor, room M1-01

1050069e 8/20/2018

Supply fan

First floor, room M1-01

1050070e 8/20/2018

Panelboards and electrical disconnect switches

First floor, room E1-01

1050071e 8/20/2018

Exhaust fan

First floor, room M1-03

1050072e 8/20/2018

Pump equipment

First floor, room M1-03

1050073e 8/20/2018

Pump equipment

First floor, room M1-03

1050074e 8/20/2018

Water heater

First floor, room M1-03

1050075e 8/20/2018

Air compressor

First floor, room M1-03

1050076e 8/20/2018

Pump equipment

First floor, room M1-03

1050077e 8/20/2018

Automatic transfer switch, panelboard and transformer

First floor, room M1-02

1050078e 8/20/2018

Supply fan and VFD

First floor, room M1-02

1050079e 8/20/2018

Fire alarm panel and panelboard

First floor, room M1-01

1050080e 8/20/2018

Fire alarm panel

First floor, room M1-01

1050081e 8/20/2018

Exterior lighting

North elevation

1050082e 8/20/2018

Exterior lighting

Site

1050083e 8/20/2018

Exterior lighting

Overhang

1050084e 8/20/2018

Exterior lighting

Loading dock

1050085e 8/20/2018

Drain piping

Overhang

1050086e 8/20/2018

Exterior lighting

Kiln area

1050087e 8/20/2018

Condensing unit

Overhang

1050088e 8/20/2018

Exterior finishes

Bunker

1050089e 8/20/2018

Exterior lighting

Site

1050090e 8/20/2018

Window AC unit

Room 102

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1050
Asset Name	Communications Technology Building
Year Built or Last Energy Renovation	1972

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

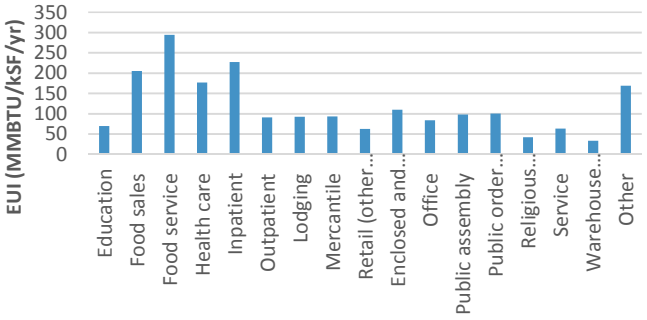
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

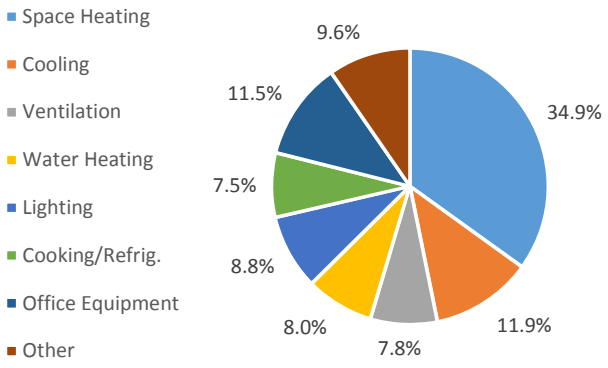


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
HVAC - Unitary Equipment Controls	UPGRADE CONTROLS. Install controls that allow the unitary equipment to be programmed for on/off and/or thermostat setpoints so that the systems operate at appropriate temperatures and do not run when the building/space is unoccupied.	LC/NC; CAP
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Health Technology
Asset 1070

Inspected August 21, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

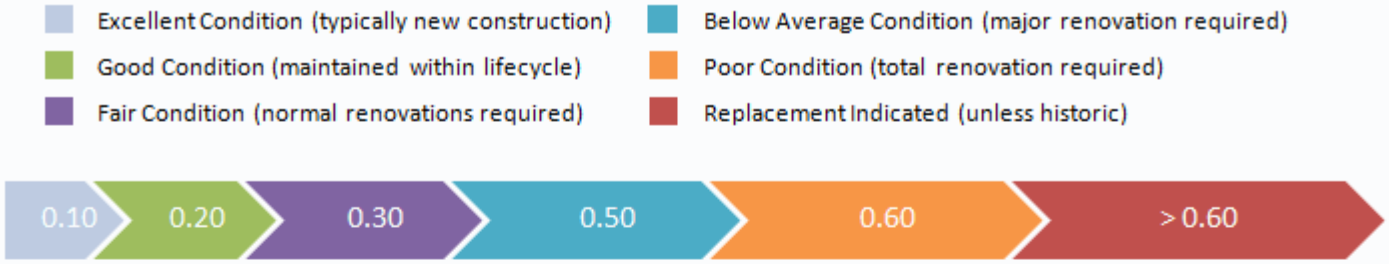
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

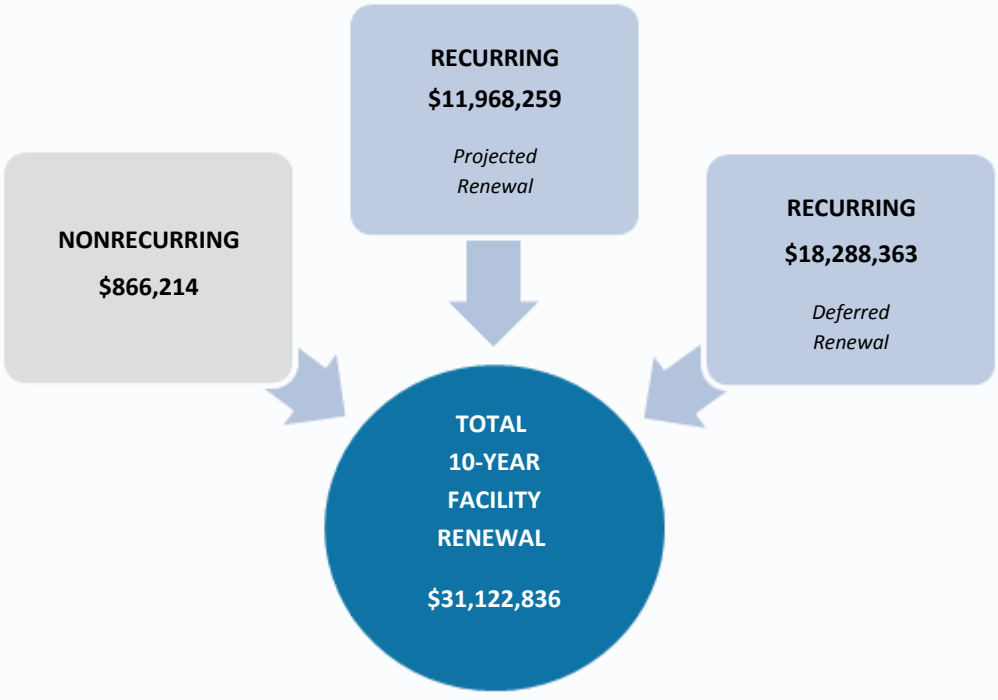
ASSET CODE	1070		
ASSET NAME	HEALTH TECHNOLOGY	**CURRENT REPLACEMENT VALUE**	$103,331,000
ASSET USE	Laboratory	**FACILITY CONDITION NEEDS INDEX**	0.30
YEAR BUILT	1972	**FACILITY CONDITION INDEX**	0.18
GSF	199,612	**10-YEAR $/SF**	155.92
INSPECTION DATE	08/21/2018		

FCNI Scale

The FCNI for this asset is **0.30**



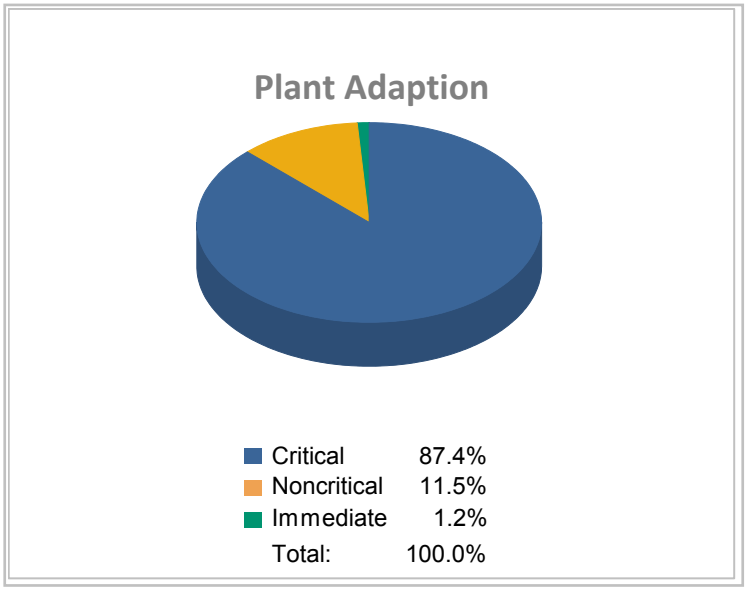
Total Facility Renewal Costs



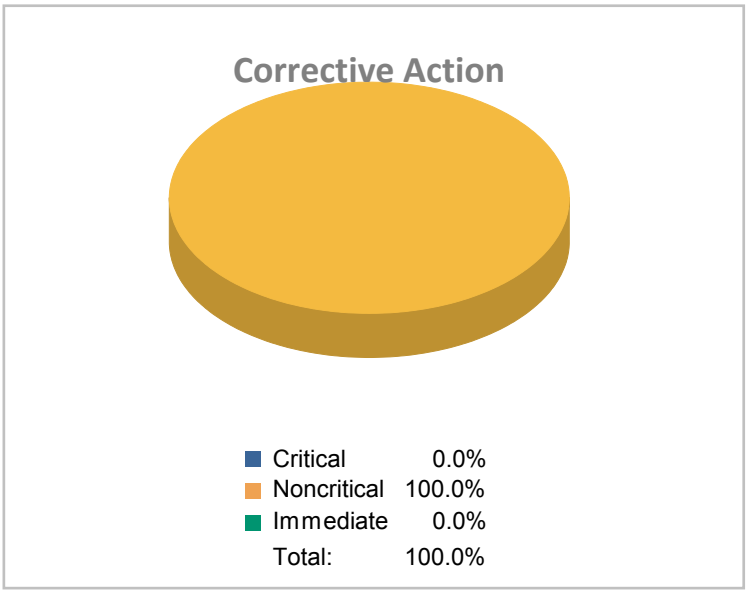
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$9,699**
2 - Critical	**$732,817**
3 - Noncritical	**$96,048**

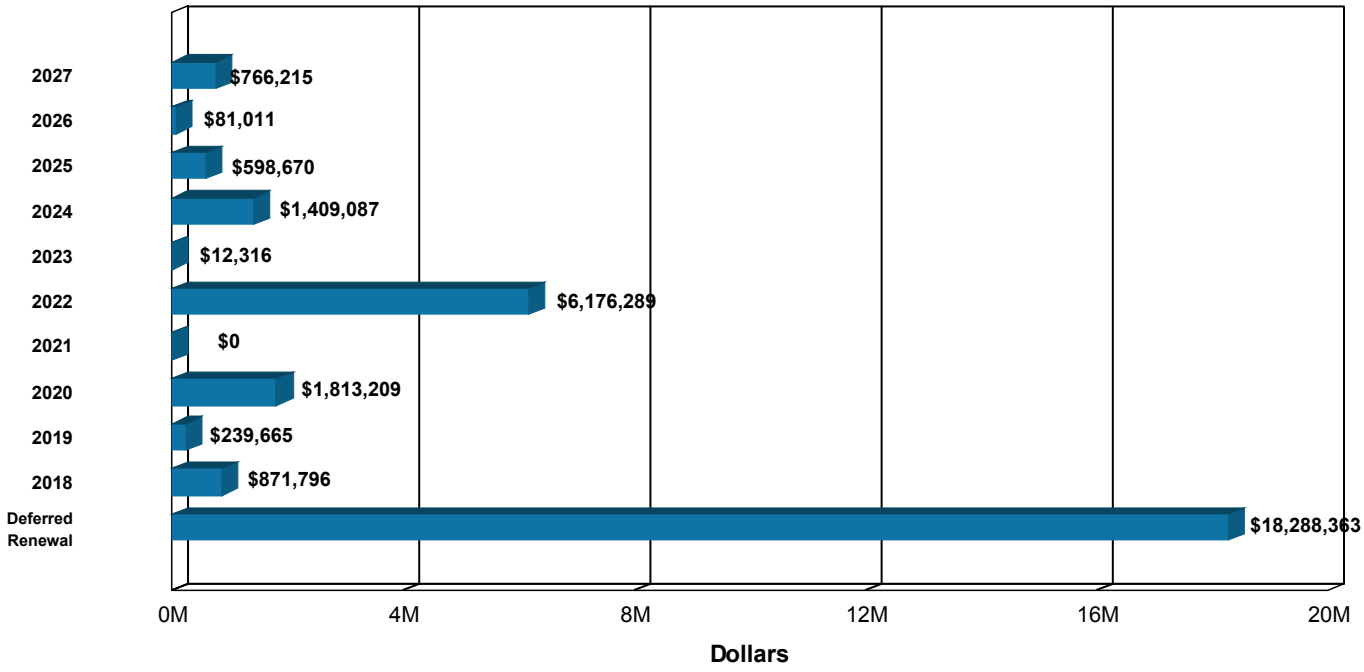


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$27,649**

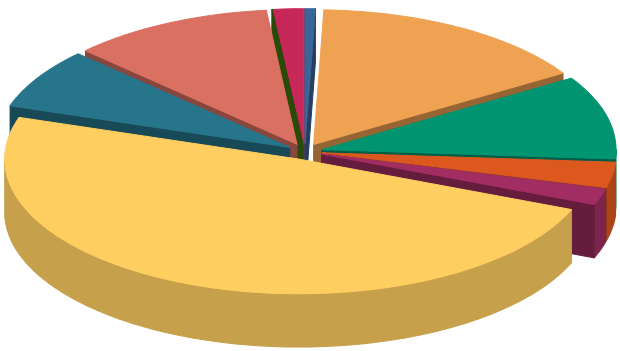


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$181,222	1%
Electrical	$4,843,940	16%
Exterior	$3,135,099	10%
Fire/Life Safety	$946,762	3%
Health	$582,376	2%
HVAC	$15,210,562	49%
Interiors	$2,222,932	7%
Plumbing	$3,439,357	11%
Site	$7,380	0%
Vert. Trans.	$553,206	2%
TOTAL	**$31,122,836**	

ASSET SUMMARY

The Health Technology Building was built in 1972 and is one of six buildings on the Portland Community College, Sylvania campus using simple Brutalist detailing of concrete post-and-beam structures supporting concrete Ts. The exterior walls are brick and steel frames with wood infill and fixed glass windows. The multiple levels of the roof are flat and the roofs and intermediate floor structures overhang the exterior walls, creating outdoor covered walks. The Health Technology building encloses 199,612 square feet of floor space and houses a child care center, classrooms, labs, offices, a basketball court, a lap swimming pool, and a diving pool.

Information for this report was gathered during a site visit conducted on August 21, 2018.

Site

The building is located on a sloping site on the north side of the campus west of the Communications Technology building. Pedestrian access to the building is provided by concrete sidewalks to the north, east, and south. Parking is available in shared campus lots, and there is limited service vehicle access at the west loading dock. The concrete pedestrian sidewalks are cracked and displaced in various areas around the building and should be replaced. The loading dock paving is in good condition but should be sealcoated within the next ten years to preserve the life of the asphalt. The play area at the child care center is enclosed by chain link fence that should outlast the scope of this report. The landscaping is in good condition and no upgrades should be necessary within the report scope.

Exterior Structure

The roof is an asphaltic multi-ply membrane with a silver reflective coating. The membrane is beginning to crack and show signs of age. It is recommended that the membrane be replaced in the next few years. A fiberglass skylight structure over the interior atrium should also be replaced within the next ten years. The exterior walls are brick, wood, and steel-framed glazing. The brick is in good condition and while the wood also appears to be in good condition, it should be refinished within the next ten years. The windows are single-glazed steel frames. While the steel is in good condition, the glass is beyond its normal useful life and should be replaced. The hollow metal pedestrian doors and the overhead coiling steel doors appear to be original and have reached the end of their anticipated useful lifecycle. They should be replaced or refurbished as needed. The concrete frame of the building also composes part of the exterior finish. The concrete is in very good condition but should be cleaned and any joints cleaned and recaulked where needed.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, sheet vinyl, sealed concrete, ceramic tile, and hardwood. The hardwood floors are in good condition and have been recently refinished. They should last beyond the

next ten years. All of the other floor finishes should be replaced or renewed within the next ten years. The interior walls are painted, clear finished, or ceramic tile. The ceramic tile is in good condition, but the painted areas should be repainted within the next ten years. The clear finished wood interior surfaces of the exterior wood wall material should also be refinished in the same timeframe.

The ceilings are suspended acoustical tile systems or painted. The older acoustical systems should be replaced while the newer systems should last another ten years. The painted ceilings should not require renewal at this time. Break room and workroom casework also varies in age and condition. The newer installations are in good condition and should outlast the scope of this report, while the older cabinetry should be replaced. The laboratory casework is in good condition as are the interior doors and only some door hardware will be need to be upgraded within the next ten years.

Accessibility

This building was built before current accessibility legislation but has been upgraded significantly to include accessible features such as grade-level access to the main entrances with powered door openers. Inside the building the doors have accessible hardware and signage, the elevators have compliant control panels, and there is one dual-level drinking fountain and accessible restrooms. However, the configuration of the single-level drinking fountain is a barrier to accessibility and they should be replaced with dual-level units and protected by cane guards or alcove walls where needed. The dual-level drinking fountain in the mall area currently has side protection by the trash can and lockers. If the trash can is moved, then a cane guard or alcove wall should be provided.

Accessibility legislation requires that building amenities be generally accessible to all persons. The configuration of the break room casework in room 01 is a barrier to accessibility. The installation of accessible break room cabinetry is recommended. Additionally, the steps and ramp in classrooms 123 and 223 are devoid of supportive handrails. It is recommended that compliant wall-mounted handrails be installed.

Accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. This scope includes directional signage.

Accessibility legislation also requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although most of the interior and exterior stairs have handrails on both sides these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile. Several small stairs in utility areas are missing one wall-mounted handrail and these should be provided as well.

Health

Emergency eyewash stations and an emergency shower are present in various rooms in the event of a mishap. The equipment appears to be well marked and in good condition with no recommendations.

Asbestos may be present on utility piping. If it is, the substance will need to be abated during the next modernization.

Fire/Life Safety

Exit access pathways are obvious, clearly marked, and have illuminated exit signs. Emergency lighting is believed to be contained in select overhead fixtures tied to the emergency power network. This appears to be an adequate application.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern Silent Knight fire alarm system with the main addressable fire alarm panel in room IDF2-1. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is well maintained. However, based on age it will reach the end of its service life within the scope of this report. A Wheellock mass notification panel was also observed and inventoried for information purposes.

The facility has an automatic sprinkler system for fire suppression with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The fire suppression system appears to provide adequate coverage and is in good condition with no recommendations. However, the stove in room 222 does not have a direct fire suppression system. It is recommended a residential-grade, wet-chemical fire suppression system be installed over the stove.

HVAC

The facility is on the campus hot water loop which is circulated as the heating media. A water-cooled chiller provides chilled water. A cooling tower with two cells provides the heat rejection. Pumps circulate the chilled and heating hot water and expansion tanks support the system. The chiller and cooling tower cells date to 2004 and appear to be in adequate condition with remaining service life. The pumps vary in age and condition. Most of the equipment has substantial remaining service life but some of the units will reach the end of their service life within the scope of this report. The expansion tanks should outlast the scope of this report.

The facility incorporates several indoor air handling units (AHUs) to provide tempered air. These units are equipped with either chilled water coils or hot water coils and some of the AHUs have return fans. Controls are a digital application that were recently upgraded. Distribution equipment consists of metal ductwork that is believed to contain reheat coils. Some of the distribution equipment was stated to be a two-pipe system. A few fan coil units (FCUs) were observed supporting the system. The HVAC system is a combination of original and new equipment. Some AHU equipment has been replaced, but the original units have reached the end of their service life. The distribution equipment appears to be mostly original and has also reached lifecycle depletion. The HVAC controls are new, but a partial modernization should be anticipated on a low priority basis.

The facility also incorporates unitary HVAC equipment to provide heating and cooling or just cooling. There are split system, rooftop package units, and outdoor air handling units serving IT rooms, the pool, and other select rooms. The equipment is charged with DX refrigerant for cooling and utilizes electric resistance for heating. The unitary equipment was installed at different times and most of the units are in excellent condition. However, one rooftop package unit has reached the end of its service life and should be considered for replacement.

Facility exhaust is provided by utility set, inline centrifugal, and rooftop centrifugal fans. The fans serve restrooms, a fume hood, dust collectors, and general exhaust needs. They were installed at different times and some of the units are original. All of the remaining original units have reached lifecycle depletion while the newer fans should continue to serve the facility beyond the scope of this report. The fume hood is in excellent condition and has substantial remaining service life. The dust collectors are believed to be original and have reached the end of their service life.

Electrical

Power is supplied to the facility via underground utilities. Two main exterior switchboards labeled east and west receive power at 480/277 volts for distribution. They are believed to date to 2004 and have capacity ratings of 1,200 and 2,000 amps. An additional switchboard in room 124D supplies power at 480/277 volts and also dates to 2004. There are also various large panelboards that were replaced in 2004. The main electrical equipment appears to be well maintained with no recommendations.

The electrical distribution network is a dual-voltage configuration. Power is supplied at 480/277 volts by select panelboards or fed to branch transformers that step the power down to 120/208 volt power. Additional panelboards supply the lower voltage power. Circuits are then energized for mechanical, lighting, and general purpose loads. The system appears to be in adequate condition and was installed at various times. Based on age, all of the remaining original electrical equipment will reach lifecycle depletion within the next ten years. Newer equipment has remaining service life beyond the scope of this report.

The interior lighting consists of lay-in, suspended, and surface-mount fixtures with acrylic or no lenses. The fixtures are lamped with T8 fluorescent and possibly LED bulbs. Additional lighting is provided by ceiling-mounted spotlights and recessed can-type fixtures. Occupancy sensors provide energy conservation. The lighting scheme appears to be a combination of various installations with some original lighting equipment still in service. Based on lifecycle depletion, all of the original lighting has reached the end of its service life and the fixtures replaced in 2004 will also require replacement within the scope of this report. Newer lighting should continue to serve the facility beyond the next ten years.

The exterior lighting consists of wall- and eave-mounted HID and non-HID fixtures. Additional lighting is provided by recessed indirect pathway fixtures and eave-mounted lighting with T8 fluorescent bulbs. Lighting was also observed on the site by pole-mounted fixtures. Some of these have LED bulbs. While the exterior lighting was observed during daylight, it appears to provide adequate coverage. However, some of the equipment will require upgrade within the next ten years.

Emergency power is provided by local Caterpillar, diesel-fired generator installed in 2004. The generator provides power at 480/277 volts and has a rated capacity of 90 kW. Two automatic transfer switches (ATS) provide the power for distribution. These GE Zenith units were also installed in 2004 and are in good condition.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to an air handling unit, pumps, supply fans, and an exhaust fan. They were installed at various times and appear to be well maintained. However, some may need to be considered for replacement over the scope of this report.

Plumbing

Domestic water is believed to be supplied through a copper and galvanized steel piping network. Backflow preventers prevent cross contamination of the water systems. Drain piping is constructed of cast-iron with hub-and-spigot or no hub connections. There is also plastic piping in renovated laboratories. The piping systems, where they could be viewed, appear to be in adequate condition. However, based on age, replacement of the domestic water system should be anticipated within the scope of this report.

Domestic hot water is produced by several water heaters. There is one commercial-grade, gas-fired unit and several commercial-grade electric water heaters. Pumps circulate the domestic hot water. This equipment was installed within the last ten years and appears to be well maintained with no recommendations. An original hot water storage tank in room M0-2 is believed to be inoperable and inventoried in this report for information only.

The facility houses several air compressors for utility service. Some were probably previously used for HVAC controls but are not in operation at this time. The compressors are original and have reached the end of their service life. If they are to be put back into service, replacement should be scheduled based on age. Vacuum pumps serve the dental school. These systems are believed to date to 2004 and are in good condition. However, replacement should be scheduled over the next ten years due to lifecycle depletion.

The facility has a lap pool and a dive pool. The equipment for the pools includes heat exchangers, pumps, and filtration equipment and was upgraded in 2012. The piping is also believed to have been upgraded. The pool equipment is in adequate condition and most has remaining service life. Some of the equipment may need to be considered for replacement on a low priority basis.

Plumbing fixtures include water closets, urinals, lavatories, kitchen sinks, utility sinks, and showers. The counter and gang lavatories have reached the end of their useful service life and should be replaced. The older kitchen and utility sinks should also be upgraded, while the newer ones should outlast the scope of this report. The remaining fixtures are in good condition and should serve another ten or more years.

Vertical Transportation

The facility has two hydraulic passenger elevators serving either two or three floors. The elevators have rated car capacities of 2,500 or 3,500 pounds. They are monitored by MCE nonproprietary controls. The elevators were modernized in 2000 and were operating properly on the day of inspection. However, the equipment will reach the end of its recommended service life within the scope of this report.

The facility also has a dumbwaiter with service to two floors. The unit may not be in service and is believed to be original. Based on age, the dumbwaiter will reach lifecycle depletion within the scope of this report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Duluth, GA 30096

Project Manager

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Date of Inspection

August 21, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	9,699	75,475	96,048	0	0	0	0	0	0	0	0	0	0	0	**$181,222**
EXTERIOR	0	0	21,454	1,307,277	0	0	1,806,369	0	0	0	0	0	0	0	**$3,135,099**
INTERIOR	0	0	0	1,312,777	0	239,665	0	0	440,197	0	68,271	81,011	81,011	0	**$2,222,932**
PLUMBING	0	0	0	146,474	0	0	0	0	3,238,624	0	30,105	0	0	24,154	**$3,439,357**
HVAC	0	0	0	14,479,674	0	0	0	0	0	0	0	1,693	0	729,195	**$15,210,562**
FIRE/LIFE SAFETY	0	74,966	0	0	871,796	0	0	0	0	0	0	0	0	0	**$946,762**
ELECTRICAL	0	0	0	1,041,569	0	0	6,841	0	2,460,228	12,316	1,310,120	0	0	12,866	**$4,843,940**
SITE	0	0	6,196	592	0	0	0	0	0	0	592	0	0	0	**$7,380**
VERT. TRANS.	0	0	0	0	0	0	0	0	37,239	0	0	515,967	0	0	**$553,206**
HEALTH/EQUIP.	0	582,376	0	0	0	0	0	0	0	0	0	0	0	0	**$582,376**
SUBTOTAL	**$9,699**	**$732,817**	**$123,698**	**$18,288,363**	**$871,796**	**$239,665**	**$1,813,209**	**$0**	**$6,176,289**	**$12,316**	**$1,409,087**	**$598,670**	**$81,011**	**$766,215**	**$31,122,836**
TOTAL NONRECURRING PROJECT NEEDS			**$866,214**	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										**$30,256,622**	

CURRENT REPLACEMENT VALUE	**$103,331,000**
FACILITY CONDITION NEEDS INDEX	**0.30**
FACILITY CONDITION INDEX	**0.18**

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
199,612	**$31,122,836**	**$155.92**

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$181,222	$0	$181,222
EXTERIOR	$21,454	$3,113,646	$3,135,099
INTERIOR	$0	$2,222,932	$2,222,932
PLUMBING	$0	$3,439,357	$3,439,357
HVAC	$0	$15,210,562	$15,210,562
FIRE/LIFE SAFETY	$74,966	$871,796	$946,762
ELECTRICAL	$0	$4,843,940	$4,843,940
SITE	$6,196	$1,184	$7,380
VERT. TRANS	$0	$553,206	$553,206
HEALTH	$582,376	$0	$582,376
TOTALS	**$866,214**	**$30,256,622**	**$31,122,836**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1070AC05	EXTERIOR STAIR ACCESSIBILITY IMPROVEMENT	C2010	1	Plant Adaption	9,699
1070FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	71,848
1070AC02	CLASSROOM 123 & 223 ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	13,400
1070AC04	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	62,074
1070FS01	INSTALL RANGE FIRE SUPPRESSION SYSTEM	D4090	2	Plant Adaption	3,118
1070HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	2	Plant Adaption	582,376
1070ES01	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	21,454
1070AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	87,620
1070AC03	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	3,645
1070AC06	BREAK ROOM CASEWORK ACCESSIBILITY IMPROVEMENT	C1030	3	Plant Adaption	4,783
1070SI01	SITE PEDESTRIAN PAVING RENEWAL	G2030	3	Corrective Action	6,196
				TOTAL	**$866,214**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1070	EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				B2010	Deferred Renewal	82,131
1070	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	Deferred Renewal	45,811
1070	WN05	GLASS, STOREFRONT				B2010	Deferred Renewal	991,123
1070	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			B2030	Deferred Renewal	44,144
1070	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	70,230
1070	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	Deferred Renewal	12,503
1070	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				B2030	Deferred Renewal	2,095
1070	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	33,125
1070	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	26,115
1070	DR26	DOOR PANIC HARDWARE, INTERIOR				C1020	Deferred Renewal	23,739
1070	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL			C1030	Deferred Renewal	100,959
1070	IW08	WALL FINISH - WOOD PANEL, STANDARD				C3010	Deferred Renewal	273,997
1070	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2004 INSTALL			C3020	Deferred Renewal	108,054
1070	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL			C3020	Deferred Renewal	29,249
1070	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				C3020	Deferred Renewal	199,962
1070	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			C3020	Deferred Renewal	198,280

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1070	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			C3030	Deferred Renewal	378,537
1070	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				D2010	Deferred Renewal	6,025
1070	FX03	PLUMBING FIXTURE - LAVATORY, GANG				D2010	Deferred Renewal	23,814
1070	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	773
1070	TK04	WATER TANK (275-1,649 GAL)		0000000184	0000000184	D2020	Deferred Renewal	26,161
1070	PG15	AIR COMPRESSOR - UTILITY (< =5 HP)		0000000179	M0-2	D2090	Deferred Renewal	4,565
1070	PG16	AIR COMPRESSOR - UTILITY (>5 HP)	QUINCY	0000000262	124B	D2090	Deferred Renewal	13,544
1070	PG16	AIR COMPRESSOR - UTILITY (>5 HP)	QUINCY	0000000263	124B	D2090	Deferred Renewal	13,544
1070	PG16	AIR COMPRESSOR - UTILITY (>5 HP)		0000000103	M0-2	D2090	Deferred Renewal	19,349
1070	PG16	AIR COMPRESSOR - UTILITY (>5 HP)	INGERSOL-RAND		107	D2090	Deferred Renewal	38,699
1070	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-1	0000000021	360	D3040	Deferred Renewal	97,601
1070	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-4	0000000024	360	D3040	Deferred Renewal	97,601
1070	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-10	0000000227	M0-2	D3040	Deferred Renewal	97,601
1070	AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU B-7	0000000233	M0-2	D3040	Deferred Renewal	221,108
1070	AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU B-8	0000000114	M0-2	D3040	Deferred Renewal	221,108
1070	FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM		0000000234	M0-2	D3040	Deferred Renewal	29,431
1070	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	COOK	0000000019	ROOF	D3040	Deferred Renewal	3,773

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1070	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	COOK	0000000020	ROOF	D3040	Deferred Renewal	3,773
1070	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000009404	ROOF	D3040	Deferred Renewal	6,899
1070	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	0000009405	ROOF	D3040	Deferred Renewal	6,899
1070	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF	0000000009	ROOF	D3040	Deferred Renewal	6,899
1070	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-5	0000009407	ROOF	D3040	Deferred Renewal	6,899
1070	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF	0000000010	ROOF	D3040	Deferred Renewal	6,899
1070	FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF	0000009406	ROOF	D3040	Deferred Renewal	8,436
1070	HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL			D3040	Deferred Renewal	13,615,430
1070	PH01	PUMP - ELECTRIC (<=10 HP)	B-25	0000000025	360	D3040	Deferred Renewal	1,693
1070	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU-1	0000000007	ROOF	D3050	Deferred Renewal	16,963
1070	DC01	DUST COLLECTION SYSTEM	DUSTVENT	0000000004	ROOF	D3090	Deferred Renewal	15,331
1070	DC01	DUST COLLECTION SYSTEM	DUST ARRESTOR	0000000139	125	D3090	Deferred Renewal	15,331
1070	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	Deferred Renewal	1,017
1070	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED			D5020	Deferred Renewal	3,051
1070	LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	ORIGINAL			D5020	Deferred Renewal	1,037,500

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1070	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE				G2020	Deferred Renewal	592
1070	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2018	857,939
1070	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		IDF2-1	D4030	2018	13,857
1070	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2019	239,665
1070	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	2020	1,661,684
1070	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				B3020	2020	144,685
1070	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	2020	3,086
1070	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2020	3,754
1070	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2022	440,197
1070	VT07	DUMBWAITER			J0-0	D1010	2022	37,239
1070	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			D2010	2022	9,986
1070	PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET				D2020	2022	3,228,638
1070	SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL			D5010	2022	2,460,228
1070	VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	CHWP-1	0000000198	124B	D5010	2023	12,316
1070	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2004 INSTALL			C3020	2024	68,271
1070	FX04	PLUMBING FIXTURE - SINK, KITCHEN	2004 INSTALL			D2010	2024	13,906

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1070	PG05	VACUUM PUMP - ROTARY VANE (<=2 HP)		0000000195	124B	D2090	2024	8,099
1070	PG05	VACUUM PUMP - ROTARY VANE (<=2 HP)		0000000196	124B	D2090	2024	8,099
1070	LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2004 UPGRADE			D5020	2024	1,096,412
1070	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2024	213,708
1070	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE				G2020	2024	592
1070	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2013 INSTALL			C3020	2025	81,011
1070	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV-2	0000004410	M0-3	D1010	2025	257,984
1070	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV-1	0000004411	M0-3	D1010	2025	257,984
1070	PH01	PUMP - ELECTRIC (<=10 HP)	PACO	0000000029	00A	D3040	2025	1,693
1070	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			C3020	2026	81,011
1070	CP01	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	HRP-1		00A	D2050	2027	1,566
1070	CP01	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	HRP-2		00A	D2050	2027	1,566
1070	WT10	RECREATIONAL POOL WATER TREATMENT SYSTEM	LAP POOL		00A	D2050	2027	9,062
1070	WT10	RECREATIONAL POOL WATER TREATMENT SYSTEM	DIVE POOL		00A	D2050	2027	11,961
1070	BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				D3060	2027	485,143
1070	BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				D3060	2027	244,052
1070	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	B-1	0000005249	360	D5010	2027	6,433

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1070 VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	B-4	0000005250	360	D5010	2027	6,433
						TOTAL	**$30,256,622**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
10	1070ES01	EXTERIOR WALL FINISH RENEWAL	3	$21,454
11	1070SI01	SITE PEDESTRIAN PAVING RENEWAL	3	$6,196
		TOTAL FOR CORRECTIVE ACTION		**$27,649**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1070AC05	EXTERIOR STAIR ACCESSIBILITY IMPROVEMENT	1	$9,699
2	1070FS01	INSTALL RANGE FIRE SUPPRESSION SYSTEM	2	$3,118
3	1070FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$71,848
4	1070HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	2	$582,376
5	1070AC02	CLASSROOM 123 & 223 ACCESSIBILITY UPGRADES	2	$13,400
6	1070AC04	INTERIOR STAIR UPGRADES	2	$62,074
7	1070AC06	BREAK ROOM CASEWORK ACCESSIBILITY IMPROVEMENT	3	$4,783
8	1070AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$87,620
9	1070AC03	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	3	$3,645
		TOTAL FOR PLANT ADAPTION		**$838,565**
		GRAND TOTAL:		**$866,214**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	1070AC05	1	Plant Adaption	EXTERIOR STAIR ACCESSIBILITY IMPROVEMENT	$9,699
5	1070AC02	2	Plant Adaption	CLASSROOM 123 & 223 ACCESSIBILITY UPGRADES	$13,400
6	1070AC04	2	Plant Adaption	INTERIOR STAIR UPGRADES	$62,074
7	1070AC06	3	Plant Adaption	BREAK ROOM CASEWORK ACCESSIBILITY IMPROVEMENT	$4,783
8	1070AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$87,620
9	1070AC03	3	Plant Adaption	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	$3,645
				TOTAL FOR ACCESSIBILITY	**$181,222**
10	1070ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$21,454
				TOTAL FOR EXTERIOR	**$21,454**
2	1070FS01	2	Plant Adaption	INSTALL RANGE FIRE SUPPRESSION SYSTEM	$3,118
3	1070FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$71,848
				TOTAL FOR FIRE/LIFE SAFETY	**$74,966**
4	1070HE01	2	Plant Adaption	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	$582,376
				TOTAL FOR HEALTH	**$582,376**
11	1070SI01	3	Corrective Action	SITE PEDESTRIAN PAVING RENEWAL	$6,196
				TOTAL FOR SITE	**$6,196**
				GRAND TOTAL:	**$866,214**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

EXTERIOR STAIR ACCESSIBILITY IMPROVEMENT

Project Number:	1070AC05	**Category Code:** AC2A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	11/28/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 405, 406, 410	Not Applicable	Item Only: Floor(s) 1,2,3

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, per floor	FLR	5	$729	$3,647	$663	$3,316	$6,963
			Base Material/Labor Costs	**$3,647**		**$3,316**	
			Indexed Material/Labor Costs	**$3,625**		**$3,342**	**$6,968**
						Construction Mark Up at 20.0%	**$1,394**
						Original Construction Cost	**$8,361**
Date of Original Estimate: 11/28/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$8,361**
						Professional Fees at 16.0%	**$1,338**
						TOTAL PROJECT COST	**$9,699**

All costs shown as Present Value

INSTALL RANGE FIRE SUPPRESSION SYSTEM

Project Number:	1070FS01	**Category Code:** FS3D	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	SUPPRESSION
Date Basis:	11/27/2018	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) 2

Description

There is no permanent fire suppression system directly over the stove in room 222. It is recommended that a residential range-top fire suppression system be installed over the stove.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Residential wet chemical, range-top fire suppression system	EA	1	$2,000	$2,000	$250	$250	$2,250
Base Material/Labor Costs				**$2,000**		**$250**	
Indexed Material/Labor Costs				**$1,988**		**$252**	**$2,240**
Construction Mark Up at 20.0%							**$448**
Original Construction Cost							**$2,688**
Date of Original Estimate: 11/27/2018						**Inflation**	**$0**
Current Year Construction Cost							**$2,688**
Professional Fees at 16.0%							**$430**
TOTAL PROJECT COST							**$3,118**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1070FS02	**Category Code:** FS6A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/24/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	65	$304	$19,760	$488	$31,720	$51,480
Base Material/Labor Costs				**$19,760**		**$31,720**	
Indexed Material/Labor Costs				**$19,641**		**$31,974**	**$51,615**
Construction Mark Up at 20.0%							**$10,323**
Original Construction Cost							**$61,938**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$61,938**
Professional Fees at 16.0%							**$9,910**
TOTAL PROJECT COST							**$71,848**

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	1070HE01	**Category Code:** HE6B	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	11/27/2018	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1,2,3,B
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There may be asbestos existent on utility piping. Prior to future renovation of these systems, this asbestos, if present, will have to be properly removed from the utility networks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from utility piping	SF	159,612	$0.33	$52,672	$0.83	$132,478	$185,150
Plumbing system - abate asbestos from supply piping network	SF	199,612	$0.33	$65,872	$0.83	$165,678	$231,550
Base Material/Labor Costs				**$118,544**		**$298,156**	
Indexed Material/Labor Costs				**$117,833**		**$300,541**	**$418,374**
Construction Mark Up at 20.0%							**$83,675**
Original Construction Cost							**$502,049**
Date of Original Estimate: 11/27/2018						**Inflation**	**$0**
Current Year Construction Cost							**$502,049**
Professional Fees at 16.0%							**$80,328**
TOTAL PROJECT COST							**$582,376**

All costs shown as Present Value

CLASSROOM 123 & 223 ACCESSIBILITY UPGRADES

Project Number:	1070AC02	**Category Code:** AC3B	
Priority Sequence:	5		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Room Only: Floor(s) 1,2

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The steps and ramp in classrooms 123 and 223 are devoid of supportive handrails. It is recommended that wall-mounted compliant handrails be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	88	$64.33	$5,661	$45.09	$3,968	$9,629
Base Material/Labor Costs				**$5,661**		**$3,968**	
Indexed Material/Labor Costs				**$5,627**		**$4,000**	**$9,627**
Construction Mark Up at 20.0%							**$1,925**
Original Construction Cost							**$11,552**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$11,552**
Professional Fees at 16.0%							**$1,848**
TOTAL PROJECT COST							**$13,400**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	1070AC04	**Category Code:** AC3B	
Priority Sequence:	6		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,3,B
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although most of the stairs have handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile. Several small stairs in utility areas are missing one wall-mounted handrail and these should be provided as well.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	32	$729	$23,343	$663	$21,221	$44,564
Base Material/Labor Costs				**$23,343**		**$21,221**	
Indexed Material/Labor Costs				**$23,203**		**$21,391**	**$44,594**
Construction Mark Up at 20.0%							**$8,919**
Original Construction Cost							**$53,512**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$53,512**
Professional Fees at 16.0%							**$8,562**
TOTAL PROJECT COST							**$62,074**

All costs shown as Present Value

BREAK ROOM CASEWORK ACCESSIBILITY IMPROVEMENT

Project Number:	1070AC06	**Category Code:** AC4A	
Priority Sequence:	7		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/28/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	703.1, 804	Not Applicable	Room Only: Floor(s) B

Description

Accessibility legislation requires that building amenities be generally accessible to all persons. The configuration of the break room casework in room 01 is a barrier to accessibility. The installation of accessible break room cabinetry is recommended.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant kitchen sink with base cabinetry knee space and accessible storage shelving upgrade	EA	1	$2,098	$2,098	$1,340	$1,340	$3,438
Base Material/Labor Costs				**$2,098**		**$1,340**	
Indexed Material/Labor Costs				**$2,085**		**$1,351**	**$3,436**
Construction Mark Up at 20.0%							**$687**
Original Construction Cost							**$4,123**
Date of Original Estimate: 11/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,123**
Professional Fees at 16.0%							**$660**
TOTAL PROJECT COST							**$4,783**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1070AC01	**Category Code:** AC3F	
Priority Sequence:	8		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,2,3,B

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the drinking fountains is a barrier to accessibility. All single-level drinking fountains should be replaced with dual-level, refrigerated units and protected by cane guards or alcove walls where needed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	10	$1,549	$15,491	$476	$4,762	$20,253
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	10	$932	$9,323	$3,321	$33,215	$42,538
			Base Material/Labor Costs	**$24,815**		**$37,976**	
			Indexed Material/Labor Costs	**$24,666**		**$38,280**	**$62,946**
					Construction Mark Up at 20.0%		**$12,589**
					Original Construction Cost		**$75,535**
Date of Original Estimate: 9/24/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$75,535**
					Professional Fees at 16.0%		**$12,086**
					TOTAL PROJECT COST		**$87,620**

All costs shown as Present Value

INTERIOR SIGNAGE ACCESSIBILITY UPGRADES

Project Number:	1070AC03	**Category Code:** AC3D	
Priority Sequence:	9		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/24/2018	**Element:**	SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	703.1	Not Applicable	Floor-wide: Floor(s) 1,2,3,B

Description

Current accessibility legislation has established signage requirements for all permanent spaces in a building. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with the intent of this legislation, it is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. This scope includes directional signage.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	30	$67.64	$2,029	$19.89	$597	$2,626
Base Material/Labor Costs				**$2,029**		**$597**	
Indexed Material/Labor Costs				**$2,017**		**$601**	**$2,618**
Construction Mark Up at 20.0%							**$524**
Original Construction Cost							**$3,142**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$3,142**
Professional Fees at 16.0%							**$503**
TOTAL PROJECT COST							**$3,645**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	1070ES01	**Category Code:** ES2B	
Priority Sequence:	10		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	11/27/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1,2,3

Description

The exterior wall systems include both wood plank and wood grille finishes. The wood appears to be in generally good condition but should be repainted within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	5,970	$0.64	$3,821	$1.93	$11,522	$15,343
			Base Material/Labor Costs	**$3,821**		**$11,522**	
			Indexed Material/Labor Costs	**$3,798**		**$11,614**	**$15,412**
						Construction Mark Up at 20.0%	**$3,082**
						Original Construction Cost	**$18,495**
Date of Original Estimate: 11/27/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$18,495**
						Professional Fees at 16.0%	**$2,959**
						TOTAL PROJECT COST	**$21,454**

All costs shown as Present Value

SITE PEDESTRIAN PAVING RENEWAL

Project Number:	1070SI01	**Category Code:** SI1A	
Priority Sequence:	11		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	9/24/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Undefined: Floor(s) 1

Description

Pedestrian paving systems are cracked and displaced in various areas around this building. This project provides an allowance for replacement of any cracked or damaged concrete sidewalks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian concrete walkways	SF	500	$4.23	$2,115	$4.66	$2,330	$4,445
Base Material/Labor Costs				**$2,115**		**$2,330**	
Indexed Material/Labor Costs				**$2,102**		**$2,349**	**$4,451**
Construction Mark Up at 20.0%							**$890**
Original Construction Cost							**$5,341**
Date of Original Estimate: 9/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,341**
Professional Fees at 16.0%							**$855**
TOTAL PROJECT COST							**$6,196**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				5,970	SF	$82,131	1972	30	15	DR
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				19,890	SF	$45,811	1972	30	15	DR
WN05	GLASS, STOREFRONT				7,020	SF	$991,123	1972	40	5	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			22	LEAF	$44,144	1972	40	5	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			35	LEAF	$70,230	1972	40	5	DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				120	SF	$12,503	1972	30	15	DR
DR22	DOOR, EXTERIOR, SLIDING, POWERED, STEEL HANGAR, LOCK	GLASS		POOL AREA	400	SF	$39,727	2010	30		2040
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			8	EA	$54,162	2010	20		2030
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			8	EA	$54,162	2010	20		2030
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				1	EA	$2,095	1972	30	15	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				35	EA	$33,125	1972	12	33	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				22	EA	$26,115	1972	12	33	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				79,478	SF	$1,661,684	2000	30	-10	2020
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				2,400	SF	$144,685	2000	20		2020
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			150	LEAF	$331,716	1972	60		2032

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			40	LEAF	$146,741	1972	60		2032
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			20	LEAF	$73,371	1972	60		2032
DR03	DOOR - OVERHEAD, INTERIOR			15	60	SF	$6,251	2010	45		2055
DR03	DOOR - OVERHEAD, INTERIOR			01	40	SF	$4,168	2010	45		2055
DR03	DOOR - OVERHEAD, INTERIOR			114A	24	SF	$2,501	2010	45		2055
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			150	EA	$112,935	2000	35		2035
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			40	EA	$30,116	2000	35		2035
DR26	DOOR PANIC HARDWARE, INTERIOR				20	EA	$23,739	1972	30	15	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL			180	LF	$100,959	1972	30	15	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	2004 INSTALL			120	LF	$67,306	2004	30		2034
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	2014 INSTALL			50	LF	$28,044	2014	30		2044
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP			3RD FLOOR	5,000	SF	$463,763	2004	40		2044
IW01	WALL FINISH - APPLIED, STANDARD				157,720	SF	$440,197	2010	12		2022
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				26,290	SF	$1,064,787	1972	60		2032
IW08	WALL FINISH - WOOD PANEL, STANDARD				13,140	SF	$273,997	1972	40	5	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2004 INSTALL			9,070	SF	$108,054	2004	12	1	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2013 INSTALL			6,800	SF	$81,011	2013	12		2025
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			6,800	SF	$81,011	2014	12		2026
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	2004 INSTALL			9,920	SF	$68,271	2004	20		2024
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL			4,250	SF	$29,249	1972	20	25	DR
IF04	FLOORING - VINYL SHEET, STANDARD				21,260	SF	$239,665	2004	15		2019
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				5,670	SF	$199,962	1972	40	5	DR
IF10	FLOORING - HARDWOOD STRIP, STANDARD	2010 INSTALL			5,670	SF	$90,569	2010	50		2060
IF10	FLOORING - HARDWOOD STRIP, STANDARD	REFINISHED		GYM FLOOR	17,010	SF	$271,706	2018	50		2068
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			56,690	SF	$198,280	1972	10	35	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL			34,010	SF	$378,537	1972	45		DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2014 INSTALL			8,500	SF	$94,607	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				70,860	SF	$197,771	2010	24		2034
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV-2	0000004410	M0-3	1	EA	$257,984	2000	25		2025
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV-1	0000004411	M0-3	1	EA	$257,984	2000	25		2025
VT07	DUMBWAITER			J0-0	1	EA	$37,239	1972	50		2022
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				7	EA	$6,025	1972	25	20	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2004 INSTALL			25	EA	$33,779	2004	35		2039
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	ACCESSIBLE		POOLSIDE	2	EA	$2,702	2010	35		2045
FX03	PLUMBING FIXTURE - LAVATORY, GANG				3	EA	$23,814	1972	35	10	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	$773	1972	20	25	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2004 INSTALL			18	EA	$13,906	2004	20		2024
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2017 INSTALL			1	EA	$773	2017	20		2037
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL			6	EA	$9,986	1972	50		2022
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	2004 INSTALL			1	EA	$1,664	2004	50		2054
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	2004 INSTALL			49	EA	$55,746	2004	35		2039
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	ACCESSIBLE		POOLSIDE	4	EA	$4,551	2010	35		2045
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	2004 INSTALL			21	EA	$35,594	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	ACCESSIBLE		POOLSIDE	2	EA	$3,390	2010	35		2045
FX14	PLUMBING FIXTURE - EMERGENCY SHOWER			302A	1	EA	$1,143	2005	50		2055
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			303	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			325	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000071	304	1	EA	$1,080	2005	35		2040

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000175	1	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			113	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000042	201	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000176	M0-4	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000043	202	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000040	204	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH		0000000047	209	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			302	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			302B	1	EA	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			326	1	EA	$1,080	2005	35		2040
BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC		125	1	EA	$7,331	2013	20		2033
BF04	BACKFLOW PREVENTER (3-4 INCHES)	DOMESTIC	0000000137	125	1	EA	$8,406	2013	20		2033
BF04	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER		124C	1	EA	$8,406	2013	20		2033
BF05	BACKFLOW PREVENTER (4-6 INCHES)	SPRINKLER		125	1	EA	$12,272	2013	20		2033
PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET				199,612	SF	$3,228,638	1972	50		2022
TK04	WATER TANK (275-1,649 GAL)		0000000184	0000000184	500	GAL	$26,161	1972	30	15	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH03	WATER HEATER - COMMERCIAL, GAS (168-225 MBH INPUT)	STATE	0000007596	125A	199	MBH	$16,468	2017	25		2042
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	HTW-1	0000005619	M0-2	120	GAL	$13,961	2010	30		2040
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	HTW-2	0000005620	M0-2	120	GAL	$13,961	2010	30		2040
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	HTW-3	0000005621	M0-2	120	GAL	$13,961	2010	30		2040
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	HTW-4	0000005622	M0-2	120	GAL	$13,961	2010	30		2040
WH15	WATER HEATER - COMMERCIAL, ELECTRIC (110-135 GAL)	HTW-5	0000005623	M0-2	120	GAL	$13,961	2010	30		2040
PD09	DRAIN PIPING SYSTEM - LABORATORY, WET				199,612	SF	$4,840,192	1972	60		2032
CP01	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	HRP-1		00A	1	HP	$1,566	2012	15		2027
CP01	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	HRP-2		00A	1	HP	$1,566	2012	15		2027
CP02	POOL CIRCULATION PUMP - ELECTRIC (10-15 HP)	LAP POOL		00A	15	HP	$20,724	2012	20		2032
CP03	POOL CIRCULATION PUMP - ELECTRIC (16-75 HP)	DIVE POOL		00A	20	HP	$17,937	2012	20		2032
FL02	POOL FILTER, SAND / DE ALL EXCEPT SPA	DIVE POOL		00A	19,800	CF	$18,890	2012	20		2032
FL02	POOL FILTER, SAND / DE ALL EXCEPT SPA	LAP POOL		00A	15,000	CF	$14,311	2012	20		2032
PS25	RECREATIONAL POOL PIPING SYSTEM	DIVE POOL		00A	19,800	CF	$93,415	2012	40		2052
PS25	RECREATIONAL POOL PIPING SYSTEM	LAP POOL		00A	15,000	CF	$70,769	2012	40		2052
WT10	RECREATIONAL POOL WATER TREATMENT SYSTEM	DIVE POOL		00A	19,800	CF	$11,961	2012	15		2027

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WT10	RECREATIONAL POOL WATER TREATMENT SYSTEM	LAP POOL		00A	15,000	CF	$9,062	2012	15		2027
PG05	VACUUM PUMP - ROTARY VANE (<=2 HP)		0000000195	124B	1	HP	$8,099	2004	20		2024
PG05	VACUUM PUMP - ROTARY VANE (<=2 HP)		0000000196	124B	1	HP	$8,099	2004	20		2024
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)		0000000179	M0-2	2	HP	$4,565	1972	25	20	DR
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	QUINCY	0000000262	124B	7	HP	$13,544	1972	25	20	DR
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	QUINCY	0000000263	124B	7	HP	$13,544	1972	25	20	DR
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	INGERSOL-RAND		107	20	HP	$38,699	1972	25	20	DR
PG16	AIR COMPRESSOR - UTILITY (>5 HP)		0000000103	M0-2	10	HP	$19,349	1974	25	18	DR
CH03	CHILLER - WATER-COOLED CENTRIFUGAL OR SCREW (350-550 TONS)	CH-1	0000000241	124C	485	TON	$671,442	2004	30		2034
CT04	COOLING TOWER (201-250 TONS)	CT-1	0000000132	SITE	250	TON	$99,089	2004	29		2033
CT04	COOLING TOWER (201-250 TONS)	CT-2	0000000133	SITE	250	TON	$99,089	2004	29		2033
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-202	0000005973	BLDG EXT	4	TON	$9,159	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-203	0000005974	BLDG EXT	3	TON	$6,869	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-201	0000005975	BLDG EXT	1	TON	$2,290	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-206	0000005976	BLDG EXT	1	TON	$2,290	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-205	0000005977	BLDG EXT	3	TON	$6,869	2017	25		2042

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	ACCU-204	0000005978	BLDG EXT	3	TON	$6,869	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FUJITSU	0000000005	ROOF	1	TON	$3,435	2010	25		2035
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FUJITSU	0000000002	ROOF	1	TON	$3,435	2010	25		2035
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000006322	ROOF	1	TON	$2,290	2015	25		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FC-3		SITE	3	TON	$6,869	2010	25		2035
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000006254	BLDG EXT	1	TON	$2,290	2010	25		2035
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)		0000004652	BLDG EXT	1	TON	$2,290	2010	25		2035
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	DESERT AIRE		SITE	20	TON	$24,657	2010	25		2035
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	DESERT AIRE		SITE	20	TON	$24,657	2010	25		2035
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FUJITSU	0000006819	IDF3-2	1	TON	$4,455	2010	30		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FUJITSU	0000006321	IDF3-2	1	TON	$4,455	2010	30		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000007711	312F	1	TON	$2,970	2015	30		2045
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FUJITSU	0000006821	IDF2-1	1	TON	$2,970	2010	30		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006250	BDF1-1	1	TON	$2,970	2015	30		2045
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	SANYO	0000006252	M0-3	1	TON	$2,970	2015	30		2045
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	ACCU-201		DAYCARE	4	KW	$1,805	2017	30		2047

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU10	EVAPORATOR UNIT, ELECTRIC HEAT (<=5 KW)	ACCU-206		DAYCARE	4	KW	$1,805	2017	30		2047
HU12	EVAPORATOR UNIT, ELECTRIC HEAT (7.5-12.5 KW)	ACCU-203		DAYCARE	11	KW	$2,704	2017	30		2047
HU12	EVAPORATOR UNIT, ELECTRIC HEAT (7.5-12.5 KW)	ACCU-204		DAYCARE	11	KW	$2,704	2017	30		2047
HU12	EVAPORATOR UNIT, ELECTRIC HEAT (7.5-12.5 KW)	ACCU-205		DAYCARE	11	KW	$2,704	2017	30		2047
HU13	EVAPORATOR UNIT, ELECTRIC HEAT (>12.5 KW)	ACCU-202		DAYCARE	15	KW	$2,564	2017	30		2047
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	FC-8	0000000270	124B	1	HP	$8,882	1998	35		2033
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	FC-7	0000000190	124	2	HP	$19,228	2004	35		2039
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-1	0000000021	360	15	HP	$97,601	1972	35	10	DR
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-4	0000000024	360	15	HP	$97,601	1972	35	10	DR
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-1	0000005626	M0-2	15	HP	$97,601	2013	35		2048
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-10	0000000227	M0-2	15	HP	$97,601	1972	35	10	DR
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU B-7	0000000233	M0-2	40	HP	$221,108	1972	35	10	DR
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU B-8	0000000114	M0-2	40	HP	$221,108	1972	35	10	DR
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-1		SITE	25	HP	$380,964	2010	25		2035
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-2		SITE	25	HP	$380,964	2010	25		2035
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	RF-1		M-02	15	HP	$29,431	2013	35		2048

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM		0000000234	M0-2	15	HP	$29,431	1972	35	10	DR
FN07	FAN - AXIAL, RETURN, 1.5" SP (>20 HP) 38,500 CFM	PACE		124F	50	HP	$82,889	2014	35		2049
FN17	FAN - AXIAL, SUPPLY, 2.5" SP (>40 HP) 70,000 CFM	SF-1		124G	50	HP	$83,492	2014	35		2049
FN17	FAN - AXIAL, SUPPLY, 2.5" SP (>40 HP) 70,000 CFM	SF-2		124G	50	HP	$83,492	2014	35		2049
FN17	FAN - AXIAL, SUPPLY, 2.5" SP (>40 HP) 70,000 CFM	SF-3		124G	50	HP	$83,492	2014	35		2049
FN17	FAN - AXIAL, SUPPLY, 2.5" SP (>40 HP) 70,000 CFM	SF-4		124G	50	HP	$83,492	2014	35		2049
FN17	FAN - AXIAL, SUPPLY, 2.5" SP (>40 HP) 70,000 CFM	SF-5		124G	50	HP	$83,492	2014	35		2049
FN17	FAN - AXIAL, SUPPLY, 2.5" SP (>40 HP) 70,000 CFM	SF-6		124G	50	HP	$83,492	2014	35		2049
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000000014	ROOF	1	EA	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	COOK	0000000019	ROOF	1	EA	$3,773	1972	25	20	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	COOK	0000000020	ROOF	1	EA	$3,773	1972	25	20	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000009404	ROOF	1	EA	$6,899	1972	25	20	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	0000009405	ROOF	1	EA	$6,899	1972	25	20	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF	0000000009	ROOF	1	EA	$6,899	1972	25	20	DR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-5	0000009407	ROOF	1	EA	$6,899	1972	25	20	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF	0000000010	ROOF	1	EA	$6,899	1972	25	20	DR
FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF	0000009406	ROOF	1	EA	$8,436	1972	25	20	DR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-1		113	1	HP	$1,321	2010	35		2045
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2	0000000117	M0-2	1	HP	$1,321	2012	35		2047
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	GREENHECK		M0-5	1	HP	$1,321	2012	35		2047
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	GREENHECK		M0-4	1	HP	$1,321	2012	35		2047
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)			113	1	HP	$1,321	2004	35		2039
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-401	0000005951	ROOF	1	HP	$5,466	2017	40		2057
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-402	0000005950	ROOF	1	HP	$5,466	2017	40		2057
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-406		ROOF	1	HP	$5,466	2017	40		2057
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-403	0000005948	ROOF	2	HP	$8,073	2017	40		2057
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-404	0000005947	ROOF	2	HP	$8,073	2017	40		2057
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	EF-405	0000005949	ROOF	3	HP	$12,110	2017	40		2057
HD01	HOOD, FUME		0000005333	302B	4	LF	$9,761	2000	35		2035
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL			159,612	SF	$13,615,430	1972	45		DR
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	2014 INSTALL			40,000	SF	$3,412,132	2014	45		2059

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HX06	HEAT EXCHANGER - PLATE FRAME (<=200 GPM)	LAP POOL	0000000118	00A	100	GPM	$14,268	2012	30		2042
HX06	HEAT EXCHANGER - PLATE FRAME (<=200 GPM)	DIVE POOL	0000000119	00A	100	GPM	$14,268	2012	30		2042
PH01	PUMP - ELECTRIC (<=10 HP)	CONDENSER WTR	0000000131	124C	1	HP	$1,693	2013	30		2043
PH01	PUMP - ELECTRIC (<=10 HP)		0000000246	124A	7	HP	$11,848	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	B-25	0000000025	360	1	HP	$1,693	1972	30	15	DR
PH01	PUMP - ELECTRIC (<=10 HP)		0000000027	360	1	HP	$1,693	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	TACO	0000009413	M0-2	1	HP	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	TACO	0000009414	M0-2	1	HP	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	TACO	0000009415	M0-2	1	HP	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	TACO	0000009416	M0-2	1	HP	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)		0000005250	124B	1	HP	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	CHP-1	0000000261	124B	10	HP	$16,926	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	PACO	0000000029	00A	1	HP	$1,693	1995	30		2025
PH06	PUMP - ELECTRIC (30 - 40 HP)	CWP-1	0000000191	124	40	HP	$41,494	2004	35		2039
TK20	EXPANSION TANK, STL PT (<20 GAL)	AMTROL		124C	5	GAL	$504	2014	30		2044
TK23	EXPANSION TANK, STL PT (50-450 GAL)	ARMSTRONG	0000000258	124C	80	GAL	$2,694	2004	30		2034

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
TK23	EXPANSION TANK, STL PT (50-450 GAL)			124	50	GAL	$1,684	2004	30		2034
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU-1	0000000007	ROOF	4	TON	$16,963	1972	25	20	DR
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU-2	0000000008	ROOF	4	TON	$16,963	2016	25		2041
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU-3	0000004466	ROOF	5	TON	$21,204	2013	25		2038
BA09	HVAC CONTROLS - TERMINAL ASSEMBLIES - LABORATORY, WET				199,612	SF	$1,701,742	2017	20		2037
BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				199,612	SF	$485,143	2017	10		2027
BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				199,612	SF	$244,052	2017	10		2027
DC01	DUST COLLECTION SYSTEM	DUSTVENT	0000000004	ROOF	1	SYS	$15,331	1972	25	20	DR
DC01	DUST COLLECTION SYSTEM	DUST ARRESTOR	0000000139	125	1	SYS	$15,331	1972	25	20	DR
FS01	FIRE SPRINKLER SYSTEM - WET				199,612	SF	$2,700,479	1972	80		2052
FA01	FIRE ALARM SYSTEM - DEVICES				199,612	SF	$857,939	2000	18		2018
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		IDF2-1	1	EA	$13,857	2000	18		2018
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		IDF2-1	1	EA	$13,857	2010	18		2028
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL			88,056	SF	$2,460,228	1972	50		2022
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	2017 UPGRADE DAYCARE			3,500	SF	$97,788	2017	50		2067
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	2012 UPGRADE			15,000	SF	$419,090	2012	50		2062

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	2004 UPGRADE			93,056	SF	$2,599,925	2004	50		2054
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANELBOARD	0000000111	M0-2	600	AMP	$7,089	2004	40		2044
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANELBOARD	0000000113	M0-2	600	AMP	$7,089	2004	40		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	PANELBOARD	0000000267	124D	1,000	AMP	$11,248	2004	40		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	WEST	0000000129	SITE	1,200	AMP	$89,981	2004	40		2044
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	4MDP-THE	0000000266	124D	2,000	AMP	$168,411	2004	40		2044
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	EAST	0000000130	SITE	2,000	AMP	$168,411	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-404	0000019520	IDF3-2	3	HP	$2,180	2017	15		2032
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	B-1	0000005249	360	15	HP	$6,433	2011	16		2027
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	B-4	0000005250	360	15	HP	$6,433	2011	16		2027
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-1	0000005624	M0-2	15	HP	$6,433	2013	16		2029
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	RF-1	0000005625	M0-2	15	HP	$6,433	2013	16		2029
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU B-10	0000005613	M0-2	15	HP	$6,433	2013	16		2029
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	LAP POOL		00A	15	HP	$6,433	2012	16		2028
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	DIVE POOL		00A	20	HP	$7,904	2012	16		2028
VF06	VARIABLE FREQUENCY DRIVE (20-25 HP)	ABB	0000006251	124D	25	HP	$9,375	2011	17		2028

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	CHWP-1	0000000198	124B	40	HP	$12,316	2005	18		2023
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	CWP-1	0000007678	124	40	HP	$12,316	2017	18		2035
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU B-8	0000005614	M0-2	40	HP	$12,316	2013	18		2031
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU B-7	0000005615	M0-2	40	HP	$12,316	2013	18		2031
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	SF-1	0000005607	124B	50	HP	$14,153	2014	19		2033
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	SF-2	0000005608	124B	50	HP	$14,153	2014	19		2033
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	SF-3	0000005609	124B	50	HP	$14,153	2014	19		2033
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	SF-4	0000005610	124B	50	HP	$14,153	2014	19		2033
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	SF-5	0000005611	124B	50	HP	$14,153	2014	19		2033
VF09	VARIABLE FREQUENCY DRIVE (40-50 HP)	SF-6	0000005612	124B	50	HP	$14,153	2014	19		2033
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			25	EA	$12,714	2010	20		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED			6	EA	$3,051	1995	20	2	DR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			2	EA	$1,017	1995	20	2	DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	EAVE-MOUNT			3	EA	$2,315	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			4	EA	$3,086	2000	20		2020
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			3	EA	$2,315	2010	20		2030

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	3	EA	$5,843	2000	40		2040
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	6	EA	$11,686	2017	40		2057
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	3	EA	$3,754	2000	20		2020
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			SITE	6	EA	$26,171	2017	20		2037
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	ORIGINAL			88,056	SF	$1,037,500	1972	20	25	DR
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2017 UPGRADE		DAYCARE	3,500	SF	$41,238	2017	20		2037
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2012 UPGRADE			15,000	SF	$176,734	2012	20		2032
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2004 UPGRADE			93,056	SF	$1,096,412	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				93,056	SF	$213,708	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				18,500	SF	$42,486	2017	20		2037
GN02	GENERATOR - DIESEL (<30-100KW)	CATERPILLAR	0000000101	SITE	90	KW	$87,893	2004	25		2029
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	HE	0000000140	124E	100	AMP	$5,527	2004	25		2029
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)		0000000110	MO-2	100	AMP	$5,527	2004	25		2029
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE				150	SY	$592	2004	7	6	DR
SI12	FENCE, CHAIN LINK, 6 FT, GATES AT 100 FT			PLAYGROUND	100	LF	$4,840	2004	30		2034

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$53,460,697				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD		5,970	SF	$82,131	DR
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		19,890	SF	$45,811	DR
B2010	GLASS, STOREFRONT		7,020	SF	$991,123	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		1	EA	$2,095	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		35	EA	$33,125	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		22	EA	$26,115	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW	22	LEAF	$44,144	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	35	LEAF	$70,230	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		120	SF	$12,503	DR
C1020	DOOR PANIC HARDWARE, INTERIOR		20	EA	$23,739	DR
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL	180	LF	$100,959	DR
C3010	WALL FINISH - WOOD PANEL, STANDARD		13,140	SF	$273,997	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2004 INSTALL	9,070	SF	$108,054	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	ORIGINAL	4,250	SF	$29,249	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD		5,670	SF	$199,962	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE	56,690	SF	$198,280	DR
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ORIGINAL	34,010	SF	$378,537	DR
D2010	PLUMBING FIXTURE - LAVATORY, COUNTER		7	EA	$6,025	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2010	PLUMBING FIXTURE - LAVATORY, GANG		3	EA	$23,814	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$773	DR
D2020	WATER TANK (275-1,649 GAL)		500	GAL	$26,161	DR
D2090	AIR COMPRESSOR - UTILITY (< =5 HP)		2	HP	$4,565	DR
D2090	AIR COMPRESSOR - UTILITY (>5 HP)	QUINCY	7	HP	$13,544	DR
D2090	AIR COMPRESSOR - UTILITY (>5 HP)	QUINCY	7	HP	$13,544	DR
D2090	AIR COMPRESSOR - UTILITY (>5 HP)	INGERSOL-RAND	20	HP	$38,699	DR
D2090	AIR COMPRESSOR - UTILITY (>5 HP)		10	HP	$19,349	DR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-1	15	HP	$97,601	DR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-4	15	HP	$97,601	DR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU B-10	15	HP	$97,601	DR
D3040	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU B-7	40	HP	$221,108	DR
D3040	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU B-8	40	HP	$221,108	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM		15	HP	$29,431	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	COOK	1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	COOK	1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-5	1	EA	$6,899	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF	1	EA	$6,899	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	EF	1	EA	$8,436	DR
D3040	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL	159,612	SF	$13,615,430	DR
D3040	PUMP - ELECTRIC (<=10 HP)	B-25	1	HP	$1,693	DR
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	RTU-1	4	TON	$16,963	DR
D3090	DUST COLLECTION SYSTEM	DUSTVENT	1	SYS	$15,331	DR
D3090	DUST COLLECTION SYSTEM	DUST ARRESTOR	1	SYS	$15,331	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED	6	EA	$3,051	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	2	EA	$1,017	DR
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	ORIGINAL	88,056	SF	$1,037,500	DR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		150	SY	$592	DR
				TOTAL DEFERRED RENEWAL COST	**$18,288,363**	

2018

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES		199,612	SF	$857,939	2018
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$13,857	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$871,796**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - VINYL SHEET, STANDARD		21,260	SF	$246,855	2019
	2019	PROJECTED COMPONENT REPLACEMENT COST			$246,855	

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	4	EA	$3,274	2020
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		3	EA	$3,983	2020
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		79,478	SF	$1,762,880	2020
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL		2,400	SF	$153,496	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$1,923,634	

No Projected Component Replacement Cost for Asset No. 1070 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	ORIGINAL	6	EA	$11,239	2022
D2020	SUPPLY PIPING SYSTEM - LABORATORY, WET		199,612	SF	$3,633,861	2022

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL	88,056	SF	$2,769,009	2022
C3010	WALL FINISH - APPLIED, STANDARD		157,720	SF	$495,446	2022
D1010	DUMBWAITER		1	EA	$41,913	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$6,951,468**	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	CHWP-1	40	HP	$14,278	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$14,278**	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	2004 INSTALL	18	EA	$16,604	2024
D2090	VACUUM PUMP - ROTARY VANE (<=2 HP)		1	HP	$9,671	2024
D2090	VACUUM PUMP - ROTARY VANE (<=2 HP)		1	HP	$9,671	2024
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2004 UPGRADE	93,056	SF	$1,309,173	2024
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	2004 INSTALL	9,920	SF	$81,519	2024
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		93,056	SF	$255,178	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,681,817**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	PUMP - ELECTRIC (<=10 HP)	PACO	1	HP	$2,082	2025
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2013 INSTALL	6,800	SF	$99,633	2025
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV-2	1	EA	$317,287	2025
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV-1	1	EA	$317,287	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$736,289	

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL	6,800	SF	$102,622	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$102,622	

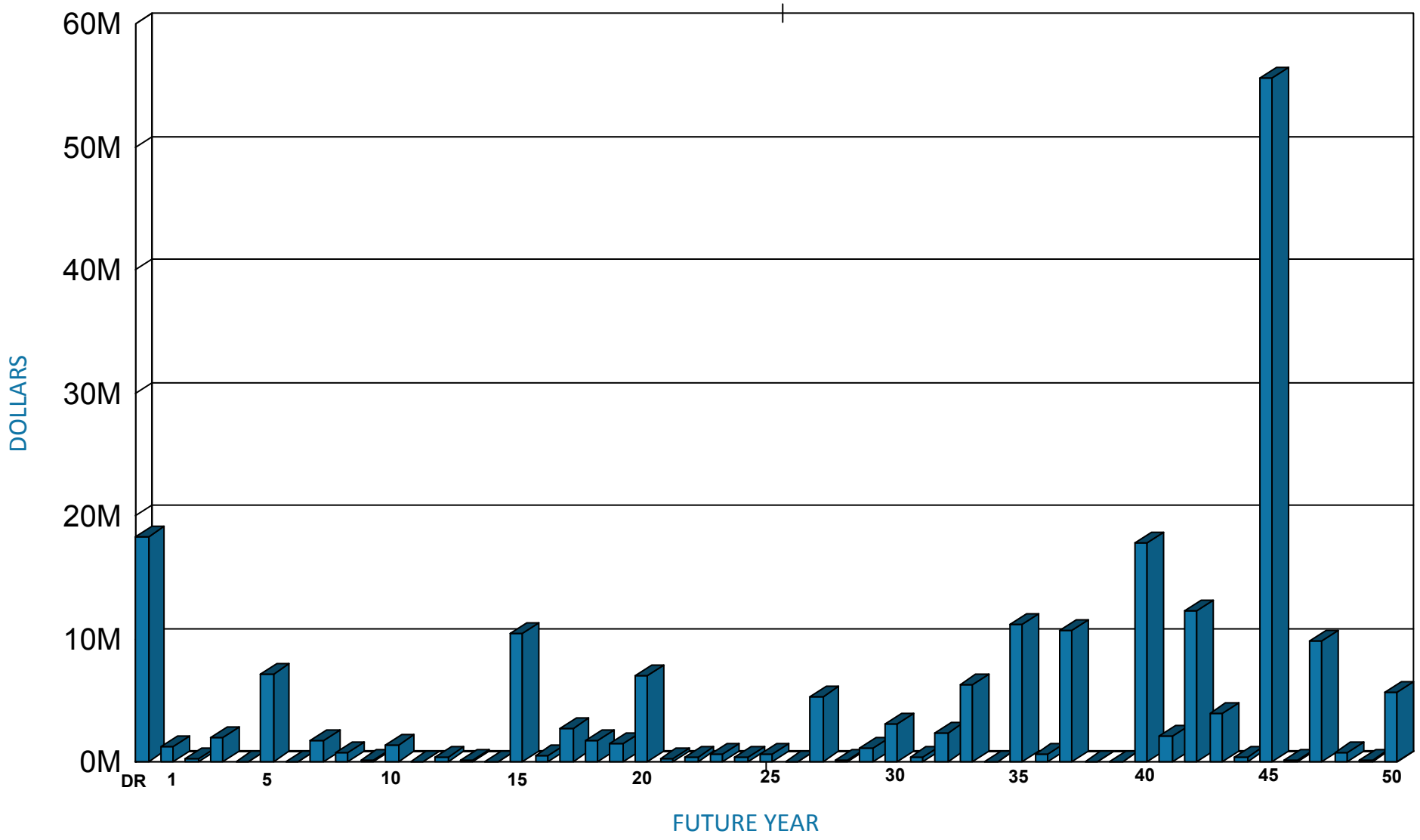
2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	B-1	15	HP	$8,394	2027
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	B-4	15	HP	$8,394	2027
D2050	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	HRP-1	1	HP	$2,043	2027
D2050	POOL CIRCULATION PUMP - ELECTRIC (<10 HP)	HRP-2	1	HP	$2,043	2027
D2050	RECREATIONAL POOL WATER TREATMENT SYSTEM	DIVE POOL	19,800	CF	$15,607	2027

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2050	RECREATIONAL POOL WATER TREATMENT SYSTEM	LAP POOL	15,000	CF	$11,823	2027
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY		199,612	SF	$318,432	2027
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY		199,612	SF	$633,002	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$999,737**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



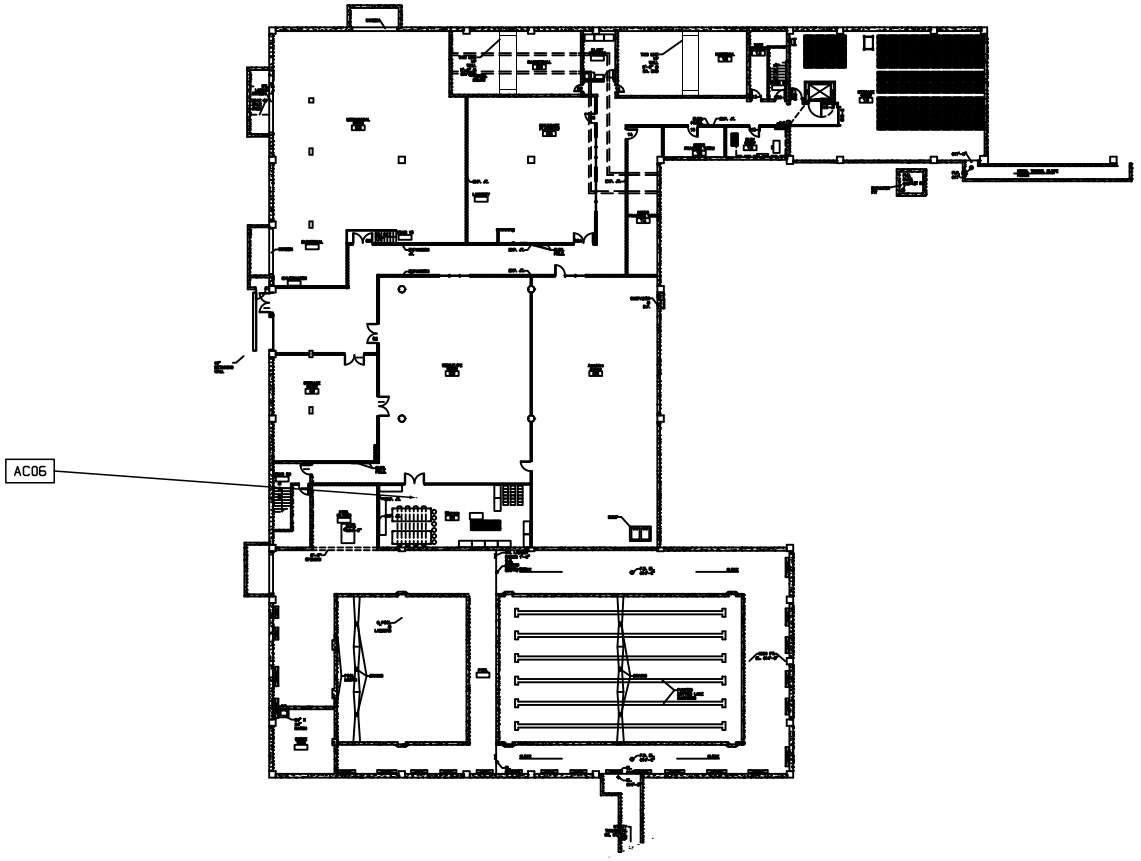
Average Annual Renewal Cost per SF $9.00

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



AC01 AC03 AC04 HE01

HEALTH TECHNOLOGY

BLDG NO. 1070

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

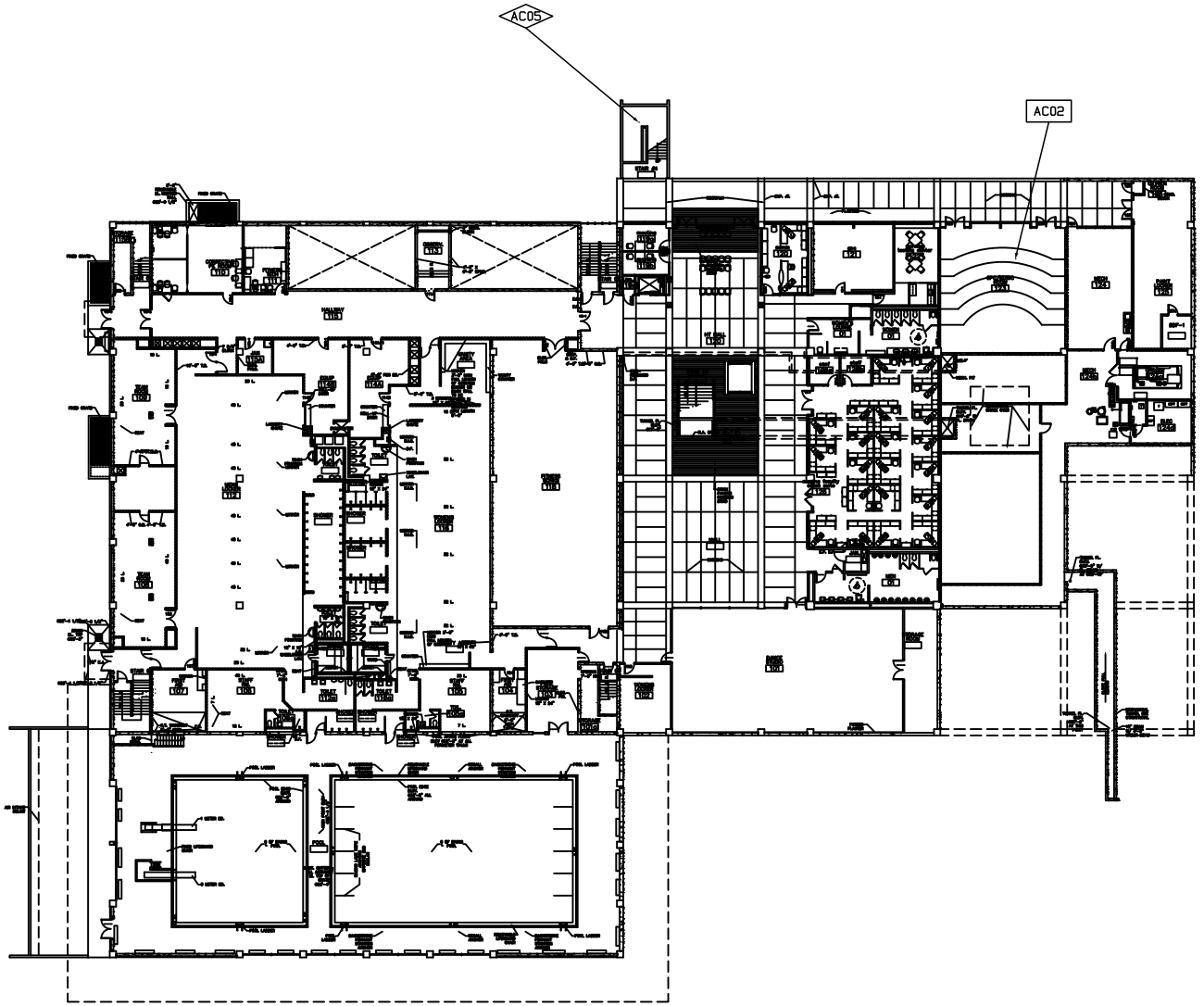
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

BASEMENT FLOOR PLAN

Sheet No.
1 of 5

PORTLAND COMMUNITY COLLEGE



ES01 SI01

AC01 AC03 AC04 HE01

HEALTH TECHNOLOGY

BLDG NO. 1070

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
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PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

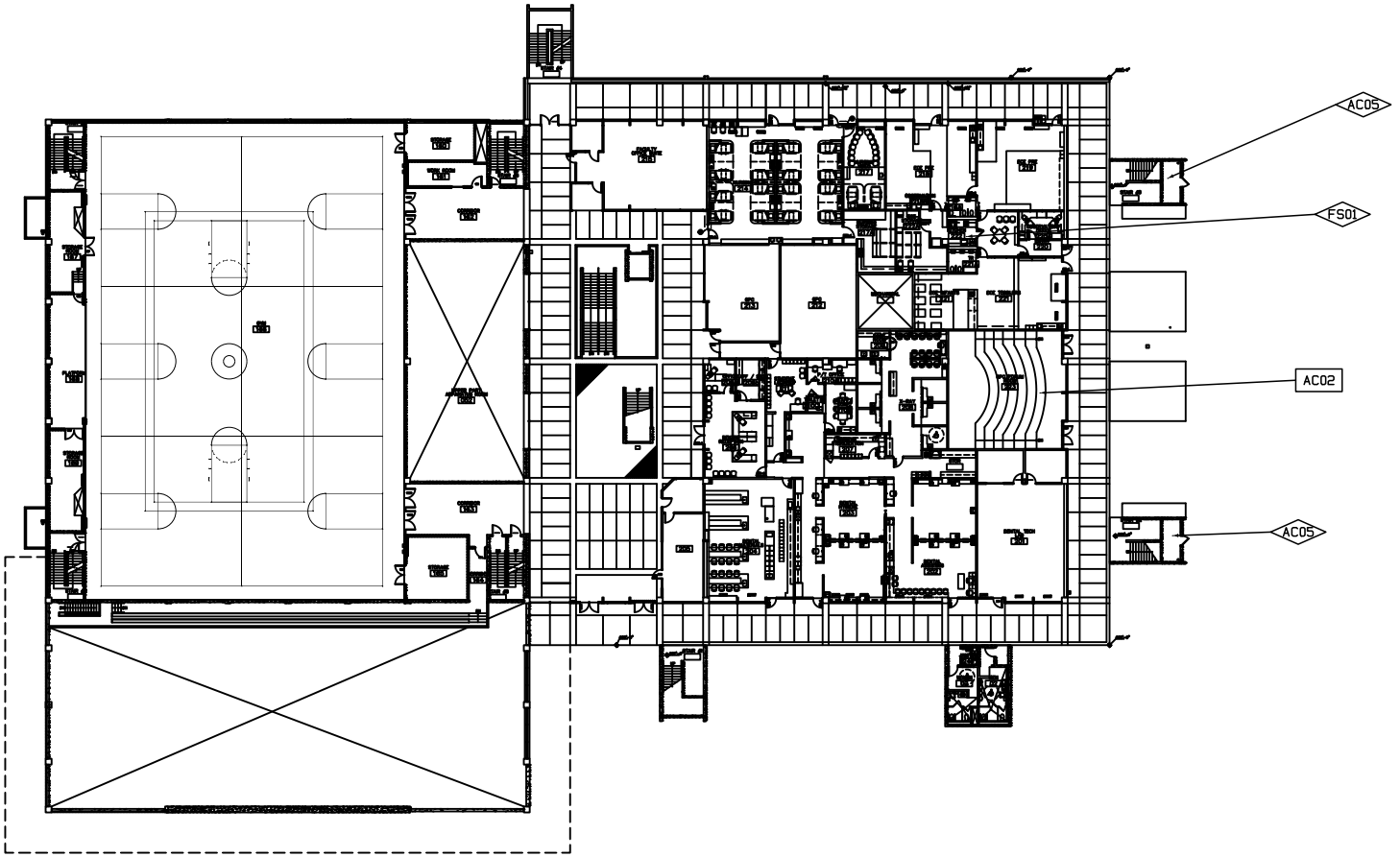
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
2 of 5

PORTLAND COMMUNITY COLLEGE



AC01 AC03 AC04 HE01

HEALTH TECHNOLOGY

BLDG NO. 1070

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

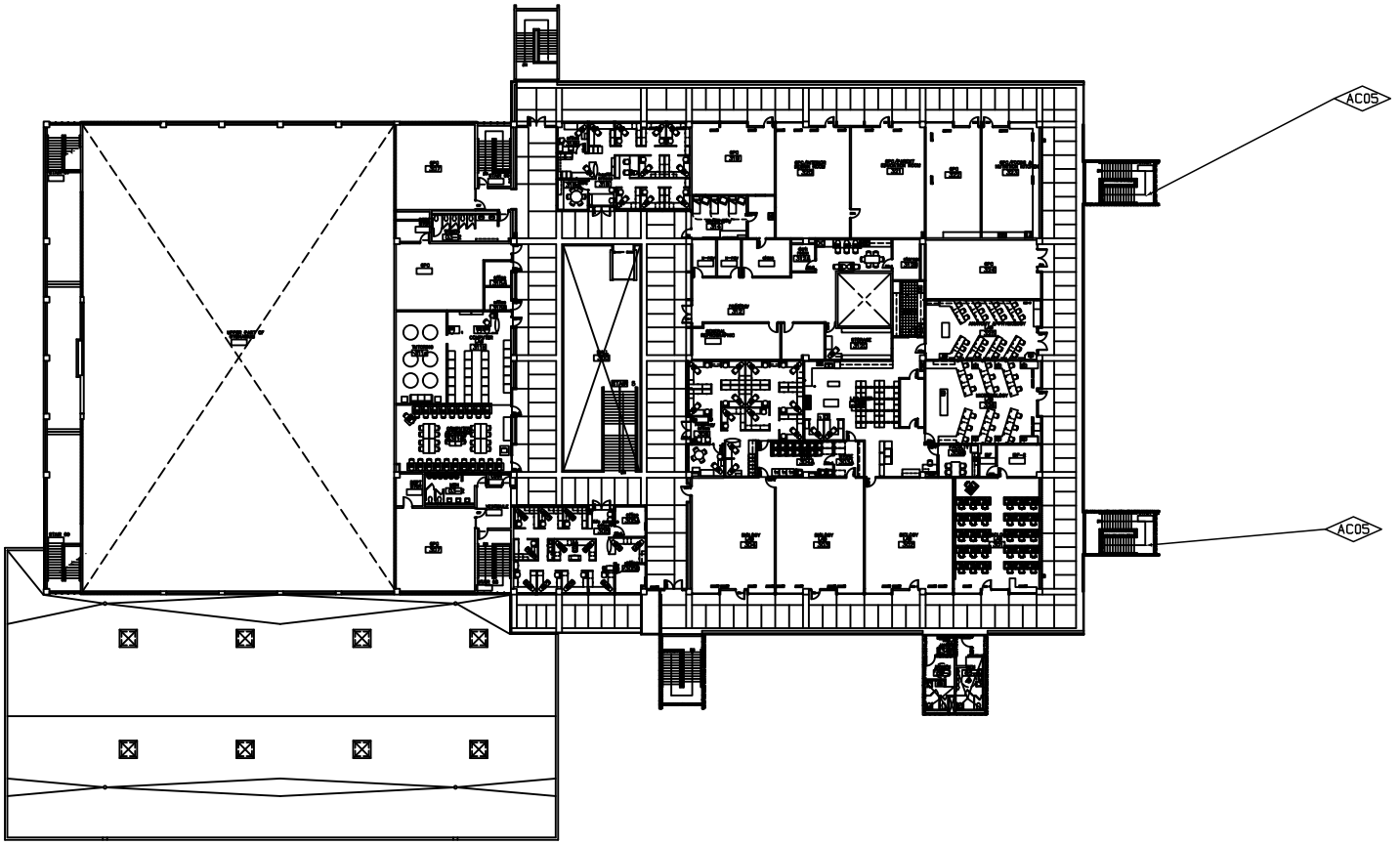
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
3 of 5

PORTLAND COMMUNITY COLLEGE



AC01 AC03 AC04 HE01

HEALTH TECHNOLOGY

BLDG NO. 1070

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

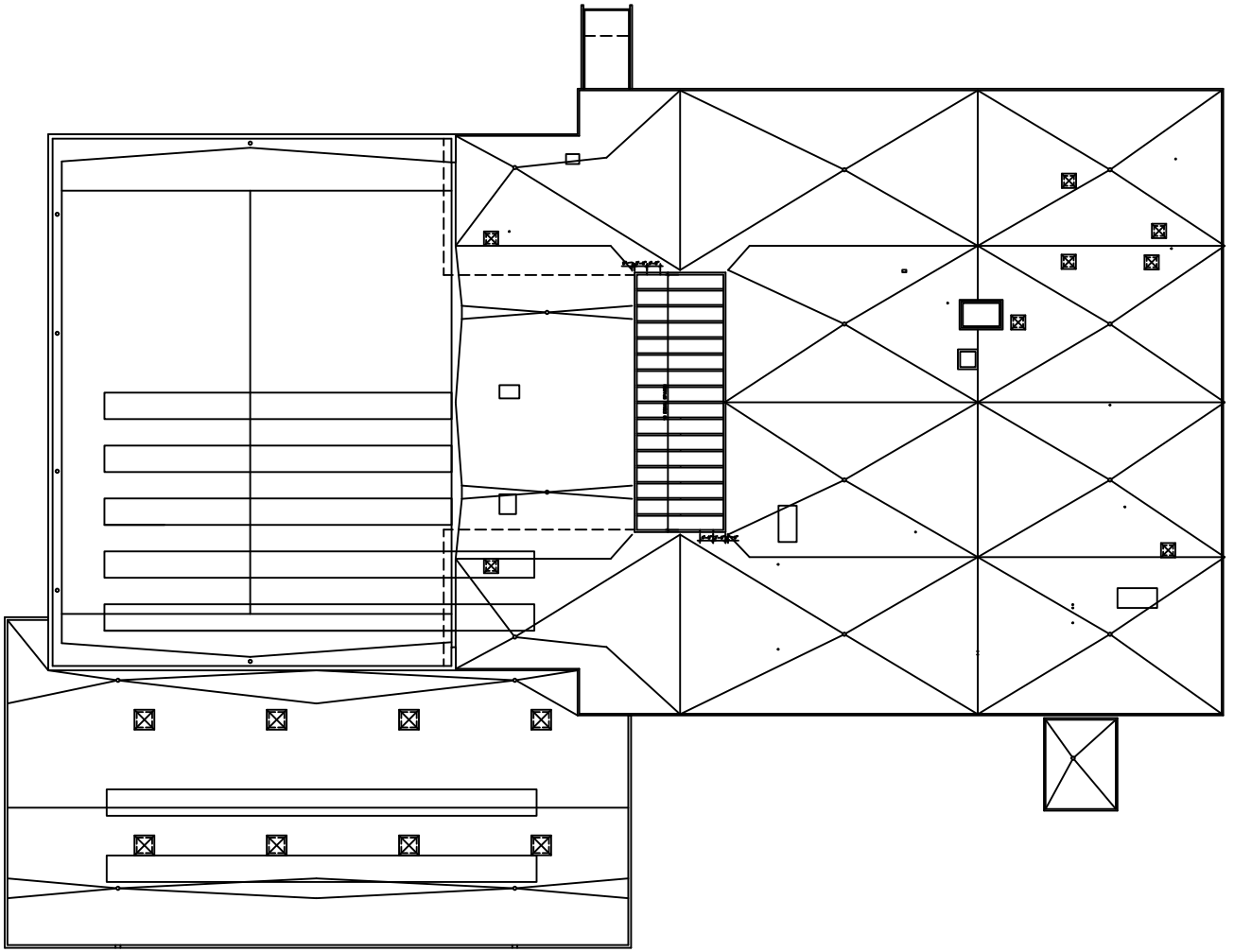
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
4 of 5

PORTLAND COMMUNITY COLLEGE



FS02

HEALTH
TECHNOLOGY

BLDG NO. 1070

ISES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/28/2018
Drawn by: A.W.
Project No. 18-064

ROOF
FLOOR
PLAN

Sheet No.
5 of 5

SECTION 6

PHOTOGRAPHS

1070001a 8/21/2018
Outdoor walkway at the third floor
South elevation

1070001e 8/21/2018
Panelboard
Second floor, room 220

1070002a 8/21/2018
Typical classroom entrance and exterior wood finishes
Room 301

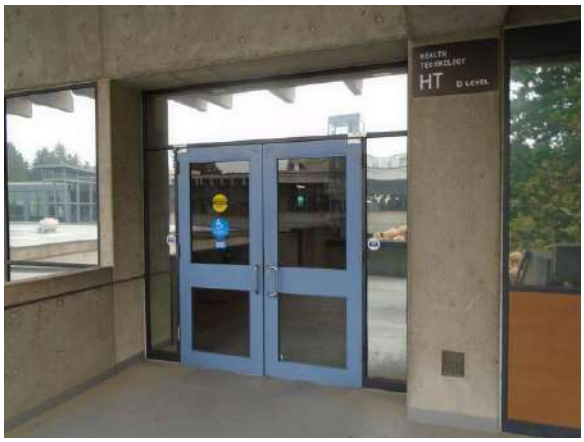
1070002e 8/21/2018
Digital thermostat
Second floor, room 220

1070003a 8/21/2018
Restroom structure entrances at the third floor
South elevation

1070003e 8/21/2018
Interior lighting
Second floor, room 220

1070004a 8/21/2018
Swimming pool structure roof, exterior finishes, and site
South elevation

1070004e 8/21/2018
Interior lighting
Second floor, room 218



1070005a 8/21/2018
Typical entrance door to the third floor common areas
South elevation

1070005e 8/21/2018
Interior lighting
Second floor, room 219

1070006a 8/21/2018
Exterior walkway finish
South elevation

1070006e 8/21/2018
Lack of fire suppression
Second floor, room 222

1070007a 8/21/2018
Stair with nonaccessible rectangular handrails
East elevation

1070007e 8/21/2018
Sink
Second floor, room 222

1070008a 8/21/2018
Entrance door without required signage
East elevation

1070008e 8/21/2018
Interior lighting
Second floor, room T2-2

1070009a 8/21/2018
Stair with nonaccessible rectangular handrails
South elevation

1070009e 8/21/2018
Interior lighting
Second floor, room 221

1070010a 8/21/2018
Second floor common area entrance
South elevation

1070010e 8/21/2018
Condensing unit
Roof

1070011a 8/21/2018
Operable walls at the swimming pool
West elevation

1070011e 8/21/2018
Exhaust fan
Roof

1070012a 8/21/2018
Exterior finishes and site conditions
West elevation

1070012e 8/21/2018
Package HVAC unit
Roof

1070013a 8/21/2018
Loading dock area
West elevation

1070013e 8/21/2018
Package HVAC unit
Roof

1070014a 8/21/2018
Cracked and broken concrete pedestrian walkway
West elevation

1070014e 8/21/2018
Dust collector
Roof

1070015a 8/21/2018
Exterior finishes and site conditions
North elevation

1070015e 8/21/2018
Package HVAC unit
Roof

1070016a 8/21/2018
First floor entrance into the building common area
North elevation

1070016e 8/21/2018
Exhaust fan
Roof

1070017a 8/21/2018
Typical casework
Room 222

1070017e 8/21/2018
Condensing unit
Roof

1070018a 8/21/2018
Child scaled lavatories
Room 221A

1070018e 8/21/2018
Exhaust fan
Roof

1070019a 8/21/2018
Child scaled water closets
Room 221A

1070019e 8/21/2018
Exhaust fan
Roof

1070020a 8/21/2018
Fenced play area
East elevation

1070020e 8/21/2018
Exhaust fan
Roof

1070021a 8/21/2018
Roof membrane and the top of a stairwell
Roof

1070021e 8/21/2018
Interior lighting
Third floor, room 317

1070022a 8/21/2018

Roof access hatch

Roof

1070022e 8/21/2018

Interior lighting

Third floor, women's restroom

1070023a 8/21/2018

Skylight structure

Roof

1070023e 8/21/2018

Exit sign and interior lighting

Third floor, corridor C3-1

1070024a 8/21/2018

Roof drain and membrane condition

Roof

1070024e 8/21/2018

Car operating panel

Elevator cab

1070025a 8/21/2018
Roof at the pool structure and roof edge without required fall protection
Roof

1070025e 8/21/2018
Interior lighting
Third floor, corridor C3-1

1070026a 8/21/2018
Skylight structure
Roof

1070026e 8/21/2018
Fire extinguisher and strobe
Third floor, corridor C3-1

1070027a 8/21/2018
Roof access ladder
Roof

1070027e 8/21/2018
Interior lighting
Third floor, room 315

1070028a 8/21/2018

Stairwell with glazed wall and noncompliant rectangular handrails

Stair 06

1070028e 8/21/2018

Interior lighting

Third floor, room 311

1070029a 8/21/2018

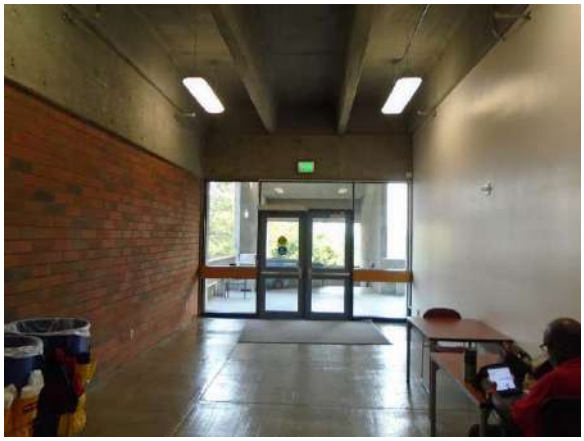
Stairwell door without required accessible signage

Stair 06

1070029e 8/21/2018

Interior lighting

Third floor, room 309



1070030a 8/21/2018

Common area entrance doors, hardware, and exit signage

Corridor near 318

1070030e 8/21/2018

Interior lighting

Third floor, room 324

1070031a 8/21/2018

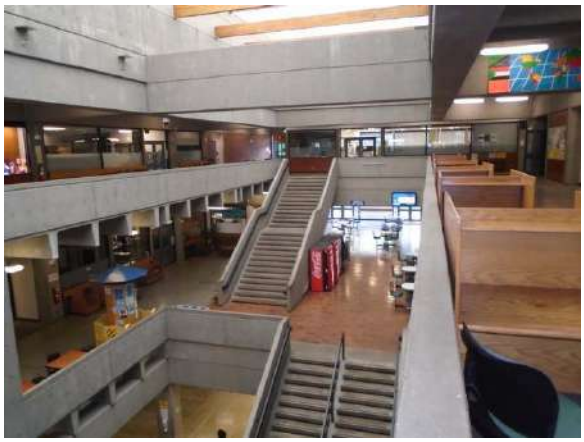
Skylight in the common area

Stair 5

1070031e 8/21/2018

Interior lighting

Third floor, room 301



1070032a 8/21/2018

Common area open stair

Stair 5

1070032e 8/21/2018

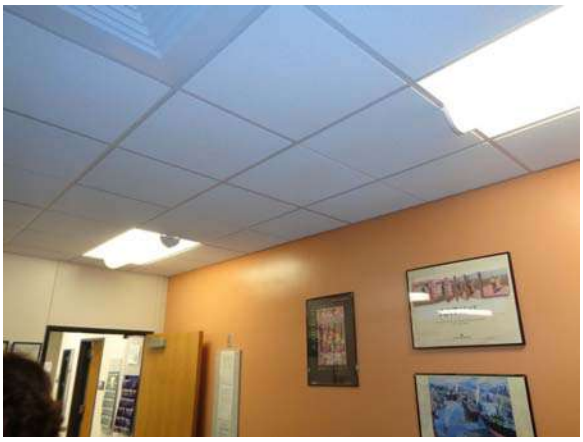
Interior lighting

Third floor, room 323

1070033a 8/21/2018

Typical finishes at walls facing the open common area

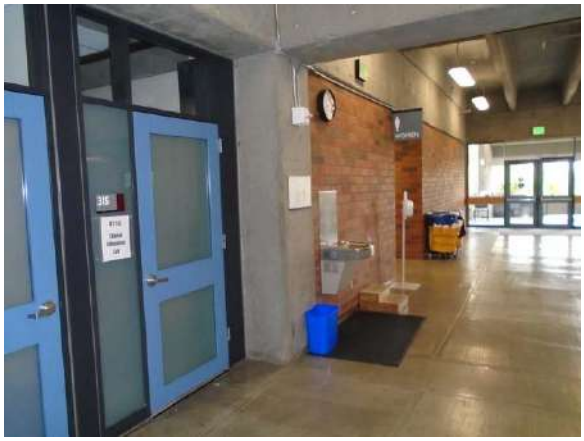
Third floor



1070033e 8/21/2018

Interior lighting

Second floor, room 206



1070034a 8/21/2018
Noncompliant drinking fountain and doors with accessible hardware and signage
Third floor

1070034e 8/21/2018
Eyewash station
Second floor, room 204

1070035a 8/21/2018
Finishes and toilet partitions
Women 03-2

1070035e 8/21/2018
Drain and supply piping
Second floor, room 204

1070036a 8/21/2018
Accessible water closet and accessories
Women 03-2

1070036e 8/21/2018
Drain piping
Second floor, room 209A

1070037a 8/21/2018

Lavatories and area finishes

Women 03-2

1070037e 8/21/2018

Exhaust hoods

Second floor, room 201

1070038a 8/21/2018

Lavatories and area finishes

Men 03-2

1070038e 8/21/2018

Interior lighting

Second floor, room 223

1070039a 8/21/2018

Urinals and area finishes

Men 03-2

1070039e 8/21/2018

Emergency light

Second floor, room 223

1070040a 8/21/2018

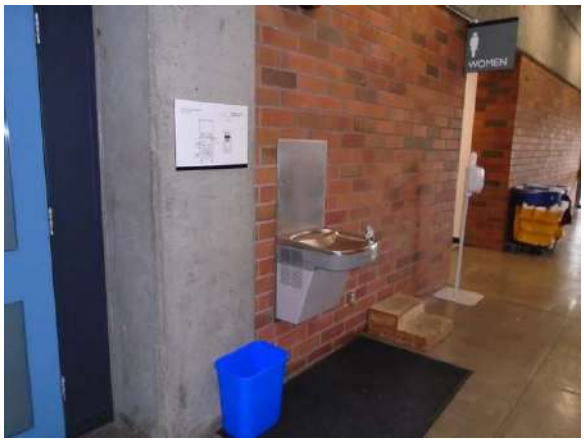
Accessible elevator control panel

Elevator

1070040e 8/21/2018

Interior lighting

Second floor, room 215



1070041a 8/21/2018

Noncompliant drinking fountain

Third floor

1070041e 8/21/2018

Fire alarm panels

Second floor, room IDF2-1

1070042a 8/21/2018

Typical classroom finishes

Room 309

1070042e 8/21/2018

Drain piping

Second floor, room IDF2-1

1070043a 8/21/2018

Stained and worn carpet

Room 309

1070043e 8/21/2018

Strobe and interior lighting

First floor, room T1-2

1070044a 8/21/2018

Utility sink

Third floor

1070044e 8/21/2018

Interior lighting

First floor, room 101

1070045a 8/21/2018

Lab casework

Room 304

1070045e 8/21/2018

Interior lighting

First floor, room 101

1070046a 8/21/2018

Lab casework

Room 326

1070046e 8/21/2018

Interior lighting

First floor, room 127

1070047a 8/21/2018

Power-operated door and accessible signage

Men 03-1

1070047e 8/21/2018

Water heater

First floor, room 124B

1070048a 8/21/2018

Floor finishes

Men 03-1

1070048e 8/21/2018

Sprinkler piping

First floor, room 124B

1070049a 8/21/2018

Lavatories and area finishes

Men 03-1

1070049e 8/21/2018

Backflow preventers

First floor, room 124B

1070050a 8/21/2018

Accessible water closet and accessories

Men 03-1

1070050e 8/21/2018

Chiller

First floor, room 124C

1070051a 8/21/2018

Casework and sink

Room 323

1070051e 8/21/2018

Expansion tank

First floor, room 124C

1070052a 8/21/2018

Lab area casework

Room 204

1070052e 8/21/2018

Air compressor

First floor, room 124C

1070053a 8/21/2018

Tiered classroom without required wall mounted handrails

Room 223

1070053e 8/21/2018

Variable frequency drive

First floor, room 124C

1070054a 8/21/2018

Tiered classroom without required wall mounted handrails

Room 223

1070054e 8/21/2018

Fan coil unit

First floor, room 124C

1070055a 8/21/2018

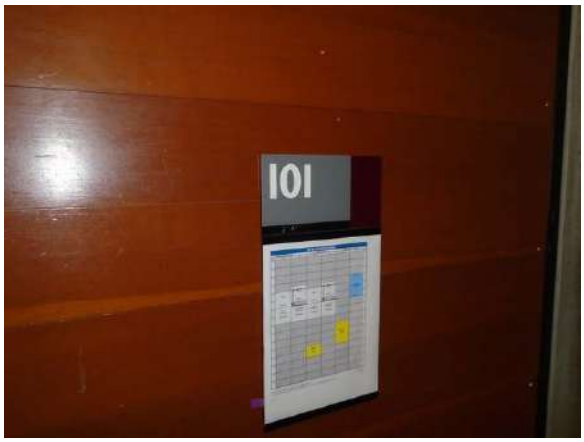
Nursing classroom finishes

Room 214

1070055e 8/21/2018

Panelboard

First floor, room 124D



1070056a 8/21/2018

Detail at typical wood wall

At room 101

1070056e 8/21/2018

Switchboard

First floor, room 124D

1070057a 8/21/2018

Dance studio finishes

Room 101

1070057e 8/21/2018

ATS and panelboards

First floor, room 124D

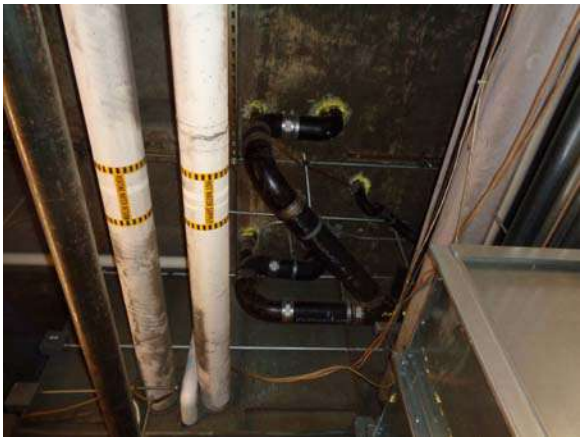
1070058a 8/21/2018
Accessible drinking fountains missing one side cane guard
First floor, common area

1070058e 8/21/2018
Pump and VFD
First floor, room 124

1070059a 8/21/2018
Tiered classroom without required wall-mounted handrails
Room 123

1070059e 8/21/2018
Fan coil unit
First floor, room 124

1070060a 8/21/2018
Ramp without required handrail
Room 123



1070060e 8/21/2018
Drain piping
First floor, room 124

1070061a 8/21/2018
Stair missing required wall-mounted handrail
Room 167

1070061e 8/21/2018
Variable frequency drives
First floor, room 124B

1070062a 8/21/2018
Gymnasium interior finishes
Room 166

1070062e 8/21/2018
Supply fan
First floor, room 124G

1070063a 8/21/2018
Gymnasium interior finishes
Room 166

1070063e 8/21/2018
Supply fan
First floor, room 124G

1070064a 8/21/2018
Locker room finishes and gang lavatory
Room 112

1070064e 8/21/2018
Return fan
First floor, room 124F

1070065a 8/21/2018
Locker room urinals, showers, and area finishes
Room 112

1070065e 8/21/2018
Switchboard
Site

1070066a 8/21/2018
Showers and finishes
Room 112

1070066e 8/21/2018
Cooling tower
Site

1070067a 8/21/2018
Accessible shower
Room 112

1070067e 8/21/2018
Pump equipment
Site

1070068a 8/21/2018
Locker room noncompliant dinking fountain
Room 112

1070068e 8/21/2018
Ceiling fans
Second floor, room 266

1070069a 8/21/2018
Swimming pool and area finishes
First floor

1070069e 8/21/2018
Panelboards
Second floor, room 267

1070070a 8/21/2018

Pool area ceiling and glazing systems

First floor

1070070e 8/21/2018

Pump equipment and AHU

Second floor, room 269

1070071a 8/21/2018

Diving pool

First floor

1070071e 8/21/2018

Exhaust fan

Roof

1070072a 8/21/2018

Upward sliding walls at the pool area

First floor

1070072e 8/21/2018

Air compressor

First floor, room 107

1070073a 8/21/2018
Pool enclosure exit doors, signage, and hardware
First floor

1070073e 8/21/2018
Interior lighting
First floor, locker room

1070074a 8/21/2018
All gender accessible restroom and shower
First floor

1070074e 8/21/2018
Sprinkler head and interior lighting
First floor, locker room

1070075a 8/21/2018
All gender accessible restroom and shower
First floor

1070075e 8/21/2018
Sprinkler head and interior lighting
First floor, room 106

1070076a 8/21/2018
All gender accessible restroom lavatory
First floor

1070076e 8/21/2018
Sprinkler head and interior lighting
First floor, room 100

1070077a 8/21/2018
Showers at the pool side locker room entrances
First floor

1070077e 8/21/2018
HVAC equipment
Site

1070078a 8/21/2018
Loading dock overhead coiling door and exit doors
West elevation

1070078e 8/21/2018
Condensing unit
Site

1070079a 8/21/2018
Loading dock overhead coiling door and exit doors
Basement

1070079e 8/21/2018
Air handling unit
Site

1070080a 8/21/2018
Typical waffle slab building structure
Basement

1070080e 8/21/2018
Exhaust fan
Basement, room M0-4

1070081a 8/21/2018
Workout room athletic flooring
Room 02

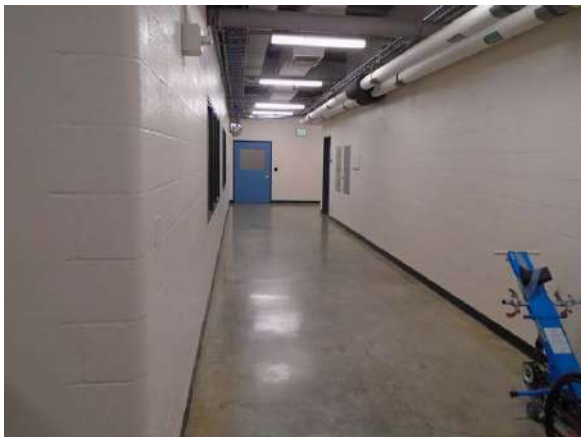
1070081e 8/21/2018
Emergency shower/eyewash station
Basement, room M0-5

1070082a 8/21/2018
Dance studio floor and wall finishes
Room 01

1070082e 8/21/2018
Pool pumps
Basement, room M0-5

1070083a 8/21/2018
Nonaccessible drinking fountain
Basement

1070083e 8/21/2018
Pool filters
Basement, room M0-5



1070084a 8/21/2018
Typical corridor finishes
Basement

1070084e 8/21/2018
Pool filter
Basement, room M0-5

1070085a 8/21/2018

Casework and sink

Basement

1070085e 8/21/2018

Heat exchanger

Basement, room 00-C

1070086a 8/21/2018

Office area finishes

Basement

1070086e 8/21/2018

Heat exchanger

Basement, room 00-C

1070087a 8/21/2018

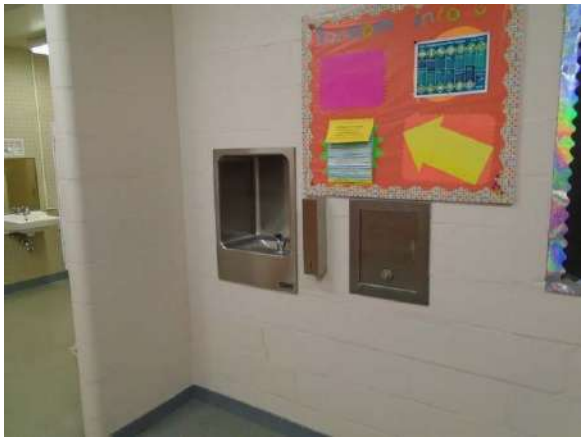
Elevator with fire door

Basement

1070087e 8/21/2018

Pump equipment

Basement, room 00-C



1070088a 8/21/2018
Nonaccessible drinking fountain
Room 116

1070088e 8/21/2018
Pump equipment
Basement, room 00-C

1070089a 8/21/2018
Water closet, lavatory, gang lavatory, and finishes
Room 116

1070089e 8/21/2018
Pump equipment
Basement, room 00-C

1070090a 8/21/2018
Gang lavatory
Room 116

1070090e 8/21/2018
Variable frequency drives
Basement, room 00-C

1070091a 8/21/2018

Lockers and finishes

Room 116

1070091e 8/21/2018

Pool filters

Basement, room 00-C

1070092a 8/21/2018

Fitness room athletic flooring and wall finishes

Room 118

1070092e 8/21/2018

Pool filters

Basement, room 00-C

1070093a 8/21/2018

Typical corridor finishes

First floor

1070093e 8/21/2018

Interior lighting

Basement, corridor

1070094e 8/21/2018

Dumbwaiter

Basement, room M0-2

1070095e 8/21/2018

Pump equipment

Basement, room M0-2

1070096e 8/21/2018

Water heaters

Basement, room M0-2

1070097e 8/21/2018

Air compressor

Basement, room M0-2

1070098e 8/21/2018

Panelboards

Basement, room M0-2

1070099e 8/21/2018

HVAC louvers

Basement, room M0-2

1070100e 8/21/2018

Panelboard

Basement, room M0-2

1070101e 8/21/2018

Air handling unit and VFDs

Basement, room M0-2

1070102e 8/21/2018

Supply fan

Basement, room M0-2

1070103e 8/21/2018

Air handling unit and VFD

Basement, room M0-2

1070104e 8/21/2018

Drain piping

Basement, room M0-2

1070105e 8/21/2018

Elevator machine room

Basement, room M0-3

1070106e 8/21/2018

Evaporator

Basement, room M0-3

1070107e 8/21/2018

Car operating panel

Elevator cab

1070108e 8/21/2018

Interior lighting

First floor, corridor

1070109e 8/21/2018

Exhaust fan

First floor, room 113

1070110e 8/21/2018

Eyewash station

First floor, room 113

1070111e 8/21/2018

Interior lighting

First floor, room 116

1070112e 8/21/2018

Interior lighting

First floor, room 116

1070113e 8/21/2018

Interior lighting

First floor, room 1188

1070114e 8/21/2018

Generator

Site

1070115e 8/21/2018

Switchboard

Site

1070116e 8/21/2018

Exterior lighting

South elevation

1070117e 8/21/2018

Exterior lighting

Childcare entrance

1070118e 8/21/2018
Condensing units
Building exterior

1070119e 8/21/2018
Exterior lighting
East elevation

1070120e 8/21/2018
Exterior lighting
West elevation

1070121e 8/21/2018
Exterior lighting
West elevation

1070122e 8/21/2018
Exterior lighting
Site

1070123e 8/21/2018
Generator
Site

1070124e 8/21/2018
Transformer
Site

1070125e 8/21/2018
Exterior lighting
Site

1070126e 8/21/2018
Exterior lighting
Site

1070127e 8/21/2018
Transformer
Site

1070128e 8/21/2018
Exterior lighting
Site

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1070
Asset Name	Health Technology
Year Built or Last Energy Renovation	1972

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

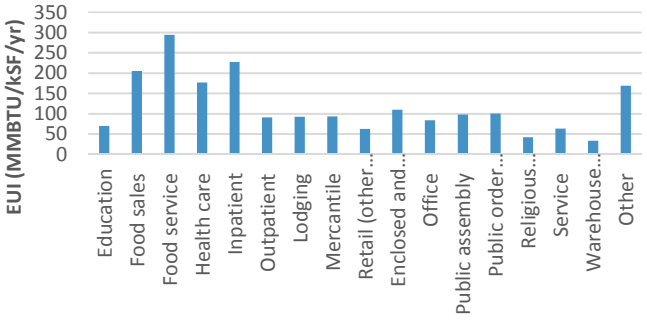
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

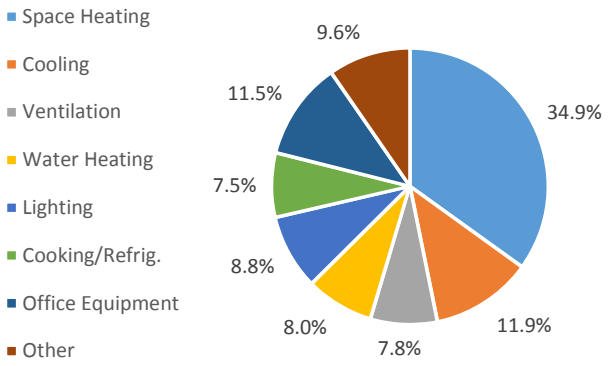


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Cooling Tower Free Cooling	INSTALL A PLATE FRAME HEAT EXCHANGER. A plate frame heat exchanger will allow free cooling during mild summer weather periods so that the chiller does not need to operate.	CAP
HVAC - Cooling Tower Meter	INSTALL A COOLING TOWER METER. A water meter on the cooling tower can be used to determine how much water is evaporated, lost to overflow, or lost to drift. This information can be sent to the water provider to reduce the cost of sewer treatment.	LC/NC
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
HVAC - Building Comfort/Tuning	CONDUCT RETROCOMMISSIONING (RCX). RCx the building to identify and address operating deficiencies, optimize HVAC operations, reduce energy bills, and improve occupant comfort.	CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Heat Plant
Asset 1060

Inspected August 22, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

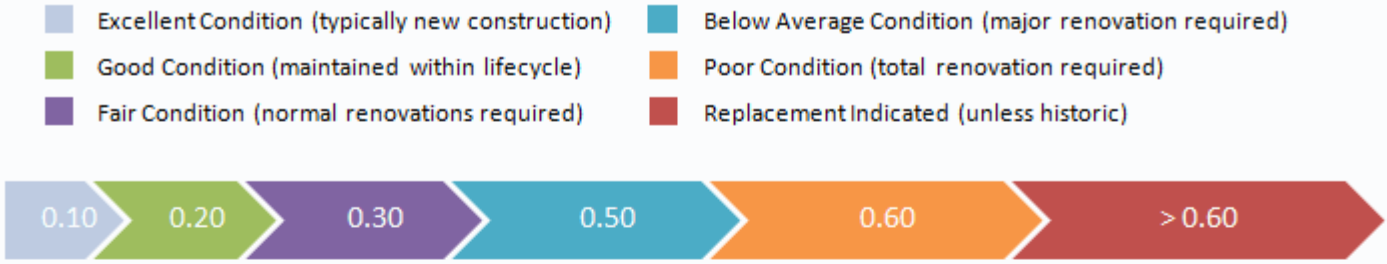
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

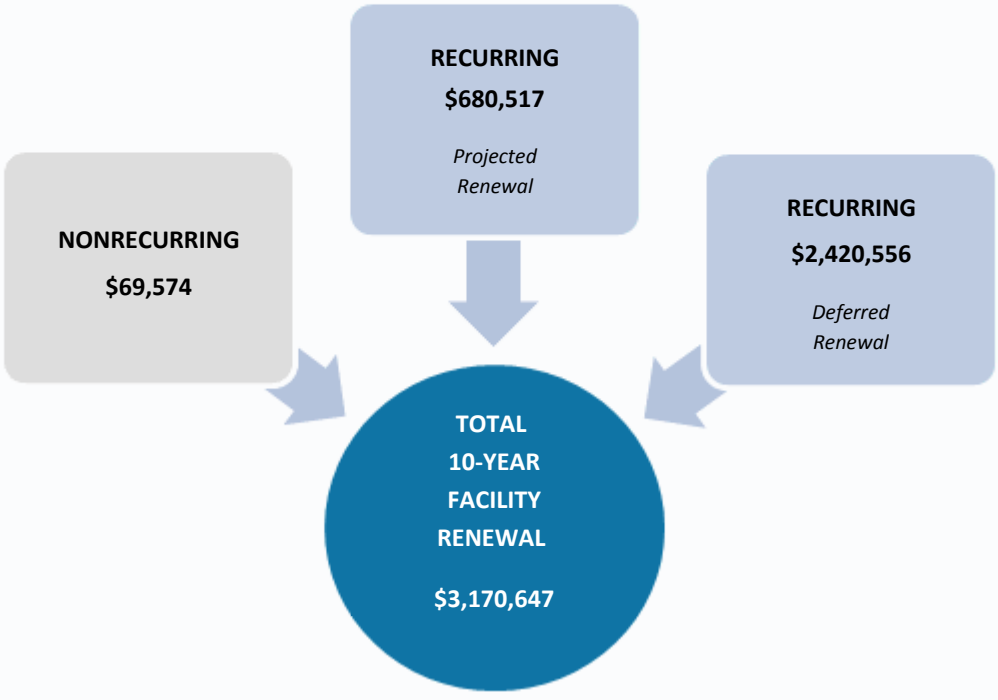
ASSET CODE	1060	**CURRENT REPLACEMENT VALUE**	$6,062,000
ASSET NAME	HEAT PLANT	**FACILITY CONDITION NEEDS INDEX**	0.52
ASSET USE	Shops / Trade	**FACILITY CONDITION INDEX**	0.40
YEAR BUILT	1968	**10-YEAR $/SF**	226.47
GSF	14,000		
INSPECTION DATE	08/22/2018		

FCNI Scale

The FCNI for this asset is **0.52**



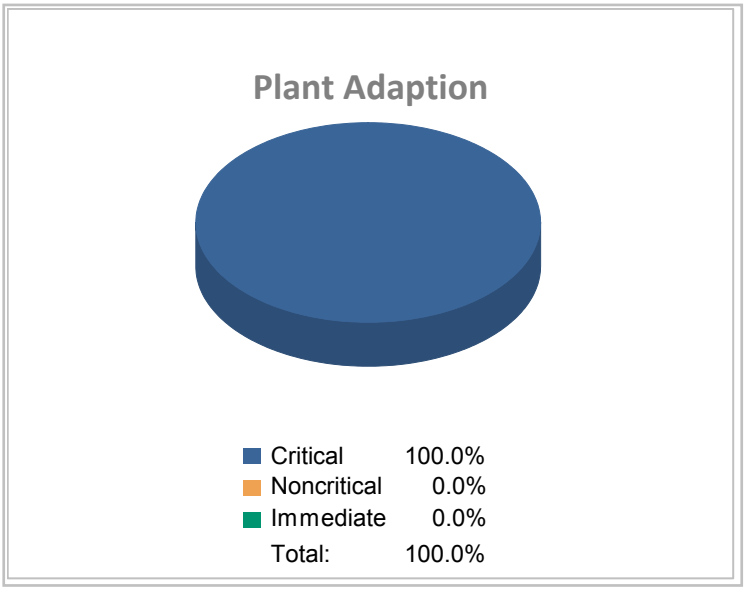
Total Facility Renewal Costs



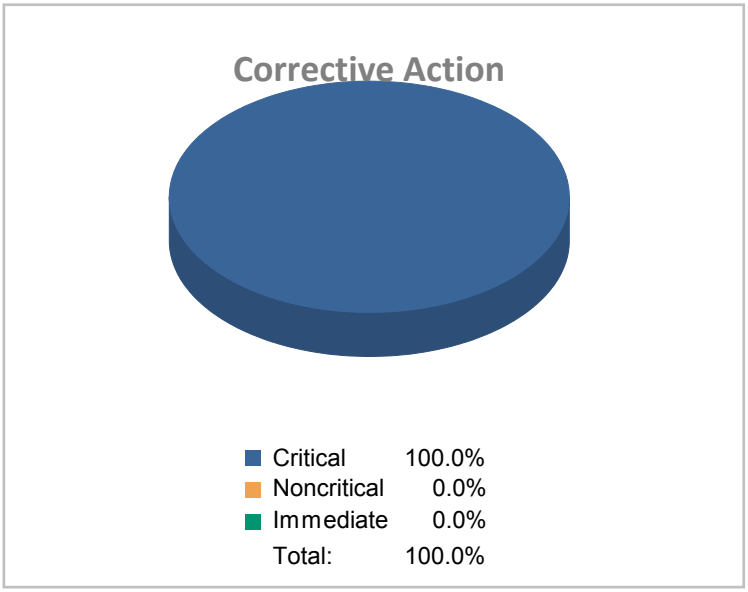
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$62,315**
3 - Noncritical	**$0**

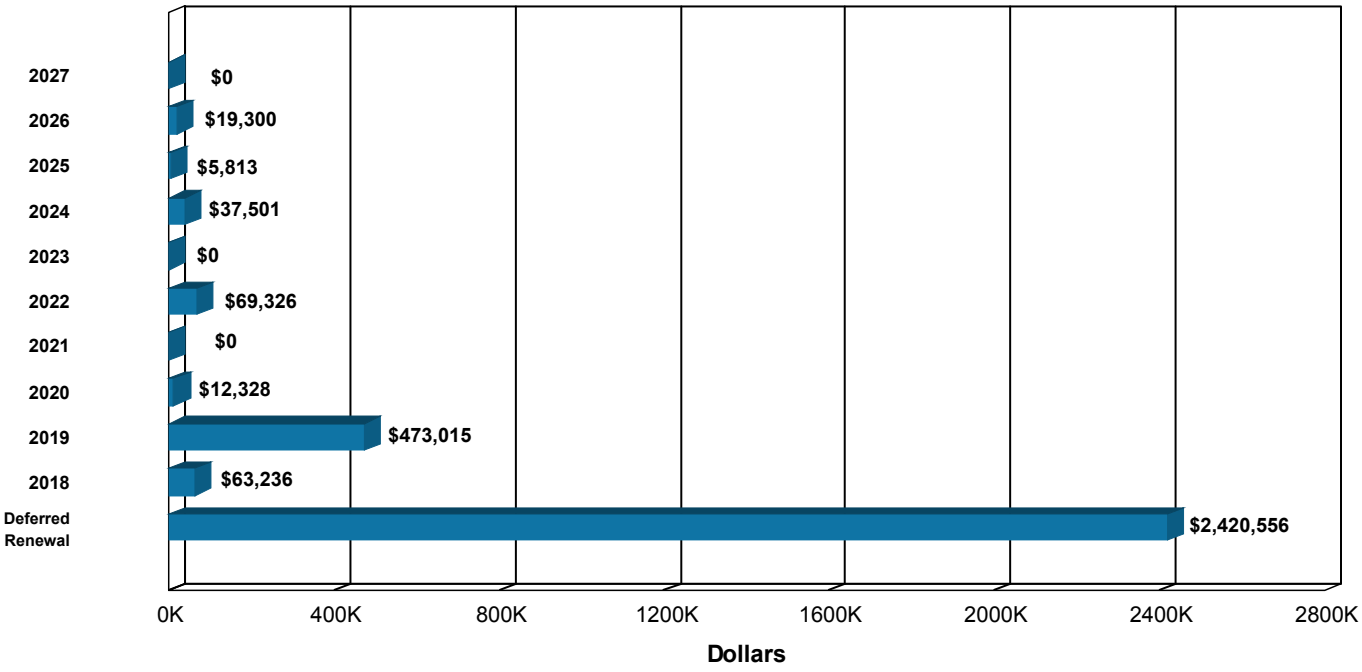


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$7,259**
3 - Noncritical	**$0**

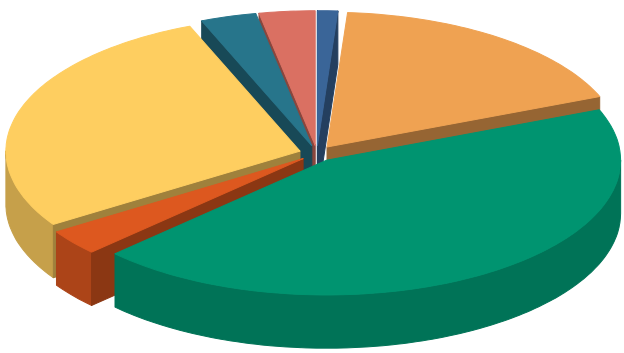


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$35,131	1%
Electrical	$559,411	18%
Exterior	$1,393,494	44%
Fire/Life Safety	$96,870	3%
Health	$0	0%
HVAC	$892,325	28%
Interiors	$98,458	3%
Plumbing	$94,958	3%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$3,170,647**	

ASSET SUMMARY

The central heating plant on the Portland Community College, Sylvania campus provides heating and domestic hot water to campus buildings. The building has a flat roof and brick exterior walls with two floors on its north end and large open center and southern sections which house the heating equipment. The two-story section has classroom space as well as offices and locker rooms for the plant staff. The Heat Plant was built in 1968 and the original boilers were replaced with high efficiency equipment in 2011. During the site visit, portions of the two-story section were under renovation.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The Heat Plant is located on the southern end of the campus near the Automotive Metals and Campus Services buildings. The site slopes down from grade-level access to the upper floor on the east side to grade-level access to the lower floor on the west side. The north side of the building is built against the base of the south wall of the Automotive Metals building at the lower floor and is attached to the walkway around the Automotive Metals building at the upper floor. The east and west sides of the building front asphalt parking lots which provide access and parking for the campus service vehicles. The landscaping is minimal but appropriate for the use of the building and no changes are recommended.

Exterior Structure

The roofing system is an asphaltic, multi-ply membrane which appears to have reached the end of its useful service life and should be replaced. The exterior finish is brick and cast concrete, all of which is in good condition. The windows are steel-framed, single-glazed units which are beyond their anticipated lifecycle and should be replaced. The exterior doors are flush, hollow-metal units and there is also a coiling steel overhead door. These doors are all beyond their useful life and should be replaced.

Interior Finishes/Systems

Most of the interior in this building is unfinished. The two-story portion of the building does have carpet, sheet vinyl, and ceramic tile flooring, as well as painted and ceramic tile walls and acoustical tile and painted ceilings. The carpet appears new and the walls in the office area are freshly painted. Suspended acoustical tile ceilings and painted ceilings also appear to be in good condition and no work is recommended. The remaining finishes should be renewed or replaced within the next ten years. The interior doors are in acceptable condition for another ten years of use. Casework in the first floor break room is in good condition and no work is recommended.

Accessibility

Most of this building is a utility space exempt from accessibility legislation. There are accessible features such as lever-handled door hardware and grade-level entrances, but there are also areas of undetermined compliance such as the restrooms, which were under renovation during the site visit. A few doors still have knob hardware and do not meet current standards and should be replaced with lever hardware. In addition, the signage is not ADA compliant. It is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. Compliant signage should meet specific size, graphical, Braille, height, and location requirements.

The locker rooms on the first floor are not fully accessible including the shower stalls. They should be rebuilt to accommodate all required accessibility features and clearances. The water closets, urinals, and lavatories may need to be rearranged to meet accessibility standards but this was not possible to determine during the site visit. The restroom on the second floor also needs properly placed accessories to make it accessible. It is recommended that all required accessories be installed in this restroom.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The interior generally has obvious and properly marked exit doors and exit access pathways. Emergency lighting is provided by select fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

The building lacks an OSHA-compliant roof access point. Install a new ladder and roof access hatch to promote user safety and limit liability. The mezzanine stair in room 101 has noncompliant open risers and handrails. The open risers should be closed and handrail extensions added to the ends of the handrails.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern Silent Knight fire alarm system with the main addressable fire alarm panel in room 104. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and is believed to have been upgraded in 2004. Based on industry standards, the system will reach the end of its service life within the scope of this report. Additionally, a Wheelock mass notification panel is inventoried in this report for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical type fire extinguishers. The system appears to provide adequate coverage and is in good condition.

HVAC

The facility provides heating hot water for the campus hot water loop. There are eight gas-fired boilers that provide the heating hot water. These Aerco units were installed in 2010 and have heating capacities of 3,000 MBH each. Pumps circulate the heating hot water. The boilers and pumps appear to be well maintained and have remaining service life beyond the next ten years. An original Kewanee boiler is not in service and was stated to be used for back-up purposes. Based on age, this boiler has reached lifecycle depletion. An exterior tank provides storage for fuel oil. The tank is believed to be new with no recommendations.

The facility also houses a water-cooled chiller for service to an adjacent facility. The unit has a cooling tower for heat rejection and pumps for circulation. The chilled water equipment was installed in 2004 and appears to be well maintained.

The facility has a rooftop package unit and a fan coil unit that provide heating and cooling. The Trane package unit was manufactured in 1994 and is in average condition. The fan coil unit dates to 2004 and appears to be well maintained. Controls are a digital application and believed to be new. Distribution equipment consists of HVAC water piping, unit heaters, and some metal ductwork. The equipment appears to be in good condition although the package unit is nearing the end of its service life. A partial control upgrade should be anticipated over the next ten years. A split system in an IT room was installed in 2018 and is in excellent condition with no recommendations.

Facility exhaust is provided by a rooftop centrifugal fan, an inline centrifugal fan, and a small odor fan. The fans serve restrooms and general exhaust ends. The equipment was installed at different times and appears to be in adequate condition. Some of the units will reach lifecycle depletion over the scope of this report.

Electrical

Power is supplied to the facility at 480/277 volts from an oil-filled transformer on the site and believed to be owned by the local utility. Power is then fed to an exterior switchboard for distribution. The 1,000 amp switchboard was installed in 2004 and appears to be well maintained with remaining service life beyond the scope of this report.

The electrical distribution system consists of panelboards that distribute power at 480/277 or 120/208 volts and two motor control centers (MCCs). Circuits are then energized for mechanical, lighting, and general purpose loads. The distribution system is in adequate condition and it appears to have been upgraded in 1994 or 2004. Based on age, the distribution system has remaining service life. However, the older MCC will reach the end of its normal lifecycle in the next few years and should be considered for upgrade.

The interior lighting consists of suspended and lay-in fixtures with parabolic, acrylic, mesh screen, or no lenses and are lamped with T8 fluorescent bulbs. The interior lighting appears to have been installed at different times and is in good condition. Based on age, the fixtures will be due for lifecycle upgrade in the next ten years.

The exterior lighting consists of wall-mounted HID and non-HID fixtures as well as eave-mounted fluorescent fixtures. Additionally, lighting is provided from the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. The exterior lighting is in good condition, but some of the fixtures may need to be scheduled for replacement within the scope of this report.

Emergency power is provided by a Caterpillar diesel-fired generator on the site. Installed in 2004, it has a rated capacity of 60 kW and provides power at 480/277 volts. Two GE Zenith automatic transfer switches (ATS) provide the power for distribution and appear to be in good condition. A separate diesel storage tank supplies the generator.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the pumps and are in good condition. Most of the units will reach the end of their recommended service life toward the end of the next ten years and may need to be upgraded on a low priority basis.

Plumbing

Domestic water is believed to be supplied through a copper and galvanized steel piping network. A backflow preventer protects the water systems from cross contamination. Drain piping is cast-iron with hub-and-spigot or no hub connections. The piping systems, where they could be viewed, appear to be in adequate condition. However, based on age, replacement of the domestic water system and the backflow preventer should be anticipated within the scope of this report.

Domestic hot water is provided by four commercial-grade, gas-fired water heaters that have service to adjacent facilities. These units were installed in 2014 and are well maintained. Pumps circulate the domestic hot water and an expansion tank supports the system. The domestic hot water equipment is in adequate condition with no recommendations. Additionally, two instantaneous water heaters serve the sink in room 106. Although these units are in good condition, one will reach lifecycle depletion in the next five years and may need to be upgraded.

The facility has two air compressors for utility service. The equipment varies in age and the original unit has reached the end of its normal lifecycle. The other unit was manufactured in 2008 and has substantial remaining service life.

It was stated that a simplex sump pump system serves the tunnel in the event of a water mishap. The unit is estimated to date to 2004 and, based on age, will reach lifecycle depletion within the scope of this report.

The plumbing fixtures include water closets, urinals, lavatories, showers, a kitchen sink, and a utility sink. The kitchen sink and one wall-hung lavatory appear to be within their normal lifecycle and should last another ten or more years. All of the other fixtures should be replaced in the next few years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 22, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	35,131	0	0	0	0	0	0	0	0	0	0	0	0	$35,131
EXTERIOR	0	0	0	1,393,494	0	0	0	0	0	0	0	0	0	0	$1,393,494
INTERIOR	0	0	0	98,458	0	0	0	0	0	0	0	0	0	0	$98,458
PLUMBING	0	0	0	22,691	63,236	0	990	0	0	0	8,041	0	0	0	$94,958
HVAC	0	0	0	858,377	0	15,711	11,338	0	6,899	0	0	0	0	0	$892,325
FIRE/LIFE SAFETY	0	34,443	0	0	0	0	0	0	62,427	0	0	0	0	0	$96,870
ELECTRICAL	0	0	0	47,536	0	457,303	0	0	0	0	29,460	5,813	19,300	0	$559,411
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$69,574	$0	$2,420,556	$63,236	$473,015	$12,328	$0	$69,326	$0	$37,501	$5,813	$19,300	$0	$3,170,647
TOTAL NONRECURRING PROJECT NEEDS			$69,574	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,101,073	

CURRENT REPLACEMENT VALUE	$6,062,000
FACILITY CONDITION NEEDS INDEX	0.52
FACILITY CONDITION INDEX	0.40

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
14,000	$3,170,647	$226.47

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$35,131	$0	$35,131
EXTERIOR	$0	$1,393,494	$1,393,494
INTERIOR	$0	$98,458	$98,458
PLUMBING	$0	$94,958	$94,958
HVAC	$0	$892,325	$892,325
FIRE/LIFE SAFETY	$34,443	$62,427	$96,870
ELECTRICAL	$0	$559,411	$559,411
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$69,574**	**$3,101,073**	**$3,170,647**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1060FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	19,896
1060FS01	INSTALL COMPLIANT LADDER WITH SAFETY CAGE	C1010	2	Plant Adaption	7,287
1060AC02	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,235
1060FS03	STAIR HANDRAIL & RISER IMPROVEMENTS	C2010	2	Corrective Action	7,259
1060AC01	LOCKER ROOM & RESTROOM ACCESSIBILITY UPGRADES	D2010	2	Plant Adaption	32,896
				TOTAL	**$69,574**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1060	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM	SINGLE GLAZED			B2020	Deferred Renewal	1,177,011
1060	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			B2030	Deferred Renewal	6,020
1060	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	14,046
1060	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	Deferred Renewal	17,504
1060	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				B2030	Deferred Renewal	2,095
1060	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	6,625
1060	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	3,561
1060	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	Deferred Renewal	166,633
1060	DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				C1020	Deferred Renewal	12,046
1060	IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				C3010	Deferred Renewal	45,362
1060	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	Deferred Renewal	11,837
1060	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				C3020	Deferred Renewal	22,218
1060	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			C3020	Deferred Renewal	6,995
1060	FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	ORIGINAL			D2010	Deferred Renewal	6,756
1060	FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				D2010	Deferred Renewal	2,275
1060	FX10	PLUMBING FIXTURE - URINAL				D2010	Deferred Renewal	1,079

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1060	FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE				D2010	Deferred Renewal	649
1060	FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				D2010	Deferred Renewal	5,085
1060	PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	ACOMP-2	0000000668	103	D2090	Deferred Renewal	6,847
1060	BL30	BOILER - GAS (5800-10000 MBH)	BL-04	0000000664	102	D3020	Deferred Renewal	858,377
1060	LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	1994 UPGRADE			D5020	Deferred Renewal	47,536
1060	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				D2010	2018	1,664
1060	PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY				D2020	2018	61,572
1060	HU31	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (5- 9 TON)	TRANE	0000000653	ROOF	D3050	2019	15,711
1060	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCCP	0000000672	103	D5010	2019	457,303
1060	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		106	D2020	2020	990
1060	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	BRAUN		208	D3040	2020	409
1060	BA43	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - SHOPS / TRADES				D3060	2020	7,218
1060	BA66	HVAC CONTROLS - MAJOR INSTRUMENTATION - SHOPS / TRADES				D3060	2020	3,711
1060	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CARNES	0000009382	ROOF	D3040	2022	6,899
1060	FA01	FIRE ALARM SYSTEM - DEVICES			104	D4030	2022	60,172
1060	FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		104	D4030	2022	2,254

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1060	BF03	BACKFLOW PREVENTER (2-3 INCHES)	WILKENS ZURN	0000000733	107	D2020	2024	7,331
1060	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SP-6	0000000752	TUNNEL	D2030	2024	710
1060	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2024	1,017
1060	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			D5020	2024	2,034
1060	LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	2004 UPGRADE			D5020	2024	26,409
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-1		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-2		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-3		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-4		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-5		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-6		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-7		103	D5010	2025	727
1060	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-8		103	D5010	2025	727
1060	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-19	0000005573	103	D5010	2026	6,433
1060	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-8	0000005572	103	D5010	2026	6,433
1060	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-9	0000005571	103	D5010	2026	6,433

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
						TOTAL	$3,101,073

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
3	1060FS03	STAIR HANDRAIL & RISER IMPROVEMENTS	2	$7,259
		TOTAL FOR CORRECTIVE ACTION		**$7,259**

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	1060FS01	INSTALL COMPLIANT LADDER WITH SAFETY CAGE	2	$7,287
2	1060FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$19,896
4	1060AC01	LOCKER ROOM & RESTROOM ACCESSIBILITY UPGRADES	2	$32,896
5	1060AC02	INTERIOR DOOR ACCESSIBILITY UPGRADES	2	$2,235
		TOTAL FOR PLANT ADAPTION		**$62,315**
		GRAND TOTAL:		**$69,574**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
4	1060AC01	2	Plant Adaption	LOCKER ROOM & RESTROOM ACCESSIBILITY UPGRADES	$32,896
5	1060AC02	2	Plant Adaption	INTERIOR DOOR ACCESSIBILITY UPGRADES	$2,235
				TOTAL FOR ACCESSIBILITY	**$35,131**
1	1060FS01	2	Plant Adaption	INSTALL COMPLIANT LADDER WITH SAFETY CAGE	$7,287
2	1060FS02	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$19,896
3	1060FS03	2	Corrective Action	STAIR HANDRAIL & RISER IMPROVEMENTS	$7,259
				TOTAL FOR FIRE/LIFE SAFETY	**$34,443**
				GRAND TOTAL:	**$69,574**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INSTALL COMPLIANT LADDER WITH SAFETY CAGE

Project Number:	1060FS01	**Category Code:** FS5A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	10/18/2018	**Element:**	DESIGNATION

Code Application:		Subclass/Savings:	Project Location:
OSHA	1910.27	Not Applicable	Item Only: Floor(s) 1

Description

The building lacks an OSHA compliant roof access point. Install a new ladder and roof access hatch to promote user safety and limit liability.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Vertical fixed roof access ladder	LF	14	$50.64	$709	$57.54	$806	$1,515
Provide roof access hatch, aluminum with curb, flashing, lock, and cover	EA	1	$1,821	$1,821	$1,893	$1,893	$3,714
Base Material/Labor Costs				**$2,530**		**$2,699**	
Indexed Material/Labor Costs				**$2,515**		**$2,720**	**$5,235**
Construction Mark Up at 20.0%							**$1,047**
Original Construction Cost							**$6,282**
Date of Original Estimate: 10/18/2018						**Inflation**	**$0**
Current Year Construction Cost							**$6,282**
Professional Fees at 16.0%							**$1,005**
TOTAL PROJECT COST							**$7,287**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1060FS02	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/18/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	18	$304	$5,472	$488	$8,784	$14,256
Base Material/Labor Costs				**$5,472**		**$8,784**	
Indexed Material/Labor Costs				**$5,439**		**$8,854**	**$14,293**
Construction Mark Up at 20.0%							**$2,859**
Original Construction Cost							**$17,152**
Date of Original Estimate: 10/18/2018						**Inflation**	**$0**
Current Year Construction Cost							**$17,152**
Professional Fees at 16.0%							**$2,744**
TOTAL PROJECT COST							**$19,896**

All costs shown as Present Value

STAIR HANDRAIL & RISER IMPROVEMENTS

Project Number:	1060FS03	**Category Code:** FS5E	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Corrective Action	**Component:**	EGRESS PATH
Date Basis:	12/4/2018	**Element:**	STAIRS AND RAILING

Code Application:		Subclass/Savings:	Project Location:
ADAAG	405, 505, 410, 309.4, 407	Not Applicable	Item Only: Floor(s) 1

Description

The mezzanine stair in room 101 has noncompliant open risers and handrails. The open risers should be closed and handrail extensions added to the ends of the handrails.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Close existing open risers	LOT	1	$1,500	$1,500	$2,500	$2,500	$4,000
Add handrail extensions	LOT	1	$400	$400	$800	$800	$1,200
Base Material/Labor Costs				**$1,900**		**$3,300**	
Indexed Material/Labor Costs				**$1,889**		**$3,326**	**$5,215**
					Construction Mark Up at 20.0%		**$1,043**
					Original Construction Cost		**$6,258**
Date of Original Estimate: 12/4/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$6,258**
					Professional Fees at 16.0%		**$1,001**
					TOTAL PROJECT COST		**$7,259**

All costs shown as Present Value

LOCKER ROOM & RESTROOM ACCESSIBILITY UPGRADES

Project Number:	1060AC01	**Category Code:** AC3E	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/18/2018	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	603	Not Applicable	Room Only: Floor(s) 1,2

Description

The locker rooms on the first floor are not fully accessible. The shower stalls are not accessible and should be rebuilt to accommodate all required accessibility features and clearances. The restroom on the second floor also needs properly placed accessories to make it accessible. It is recommended that all required accessories be installed in this restroom.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Roll-in shower	EA	2	$4,178	$8,356	$5,438	$10,876	$19,231
Grab bars	SYS	1	$180	$180	$424	$424	$605
Mirror	EA	1	$371	$371	$285	$285	$657
Accessible toilet stall	EA	2	$1,230	$2,460	$325	$650	$3,110
			Base Material/Labor Costs	**$11,367**		**$12,235**	
			Indexed Material/Labor Costs	**$11,299**		**$12,333**	**$23,632**
					Construction Mark Up at 20.0%		**$4,726**
					Original Construction Cost		**$28,359**
Date of Original Estimate: 10/18/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$28,359**
					Professional Fees at 16.0%		**$4,537**
					TOTAL PROJECT COST		**$32,896**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	1060AC02
Priority Sequence:	5
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/4/2018

Category Code: AC3C

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4, 703.1	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever-handle hardware be installed on all doors that still have knobs. In addition, the signage is not ADA compliant. It is recommended that all noncompliant signage be upgraded to conform to the appropriate accessibility standards. Compliant signage should meet specific size, graphical, Braille, height, and location requirements.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant signage	EA	6	$67.64	$406	$19.89	$119	$525
ADA-compliant commercial-grade door hardware	EA	2	$387	$774	$155	$310	$1,084
			Base Material/Labor Costs	**$1,180**		**$429**	
			Indexed Material/Labor Costs	**$1,173**		**$433**	**$1,605**
					Construction Mark Up at 20.0%		**$321**
					Original Construction Cost		**$1,926**
Date of Original Estimate: 12/4/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$1,926**
					Professional Fees at 16.0%		**$308**
					TOTAL PROJECT COST		**$2,235**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				720	SF	1.12	$1,658	1968	30	31	2029
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM	SINGLE GLAZED			4,800	SF	1.12	$1,177,011	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			7	LEAF	1.00	$14,046	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			3	LEAF	1.00	$6,020	1968	40		DR
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				168	SF	1.00	$17,504	1968	30	19	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				1	EA	1.00	$2,095	1968	30	19	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				7	EA	1.00	$6,625	1968	12	37	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				3	EA	1.00	$3,561	1968	12	37	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				7,970	SF	1.00	$166,633	1968	30	19	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				16	LEAF	1.00	$35,383	1968	60		2028
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				16	EA	1.00	$12,046	1968	35	14	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				14	LF	1.00	$7,852	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				3,370	SF	1.00	$9,406	2018	12	37	2067
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				1,120	SF	1.00	$45,362	1968	60	-15	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			OFFICE	100	SF	1.00	$1,191	2017	12		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF04	FLOORING - VINYL SHEET, STANDARD				1,050	SF	1.00	$11,837	1968	15	34	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				630	SF	1.00	$22,218	1968	40	9	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			2,000	SF	1.00	$6,995	2000	10	7	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				1,050	SF	1.00	$11,687	2010	45		2055
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				1,050	SF	1.00	$2,931	2010	24		2034
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	2018 INSTALL			1	EA	1.00	$1,351	2018	35		2053
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	ORIGINAL			5	EA	1.00	$6,756	1968	35	14	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	2018	20		2038
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				1	EA	1.00	$1,664	1968	50		2018
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				2	EA	1.00	$2,275	1968	35	14	DR
FX10	PLUMBING FIXTURE - URINAL				1	EA	1.00	$1,079	1968	35	14	DR
FX11	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE				1	EA	1.00	$649	1968	35	14	DR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				3	EA	1.00	$5,085	1968	35	14	DR
BF03	BACKFLOW PREVENTER (2-3 INCHES)	WILKENS ZURN	0000000733	107	1	EA	1.00	$7,331	2004	20		2024
PS20	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY				14,000	SF	1.00	$61,572	1968	50		2018

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
TK09	EXPANSION TANK, STL PT (50-450 GAL)	BELL & GOSSETT	0000006909	103	50	GAL	1.00	$1,684	2014	30		2044
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	WH-1	0000005567	103	500	MBH	1.00	$29,086	2014	25		2039
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	WH-2	0000005568	103	500	MBH	1.00	$29,086	2014	25		2039
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	WH-3	0000005569	103	500	MBH	1.00	$29,086	2014	25		2039
WH05	WATER HEATER - COMMERCIAL, GAS (310-613 MBH INPUT)	WH-4	0000005570	103	500	MBH	1.00	$29,086	2014	25		2039
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		106	1	EA	1.00	$990	2018	10		2028
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		106	1	EA	1.00	$990	2010	10		2020
PD20	DRAIN PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY				14,000	SF	1.00	$92,334	1968	60		2028
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SP-6	0000000752	TUNNEL	1	EA	1.00	$710	2004	20		2024
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	ACOMP-2	0000000668	103	3	HP	1.00	$6,847	1968	25	24	DR
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	ACOMP-1	0000000662	102	7	HP	1.00	$13,544	2008	25		2033
BL28	BOILER - GAS (2400-3500 MBH)	B-1	0000000680	103	3,000	MBH	1.00	$75,976	2010	28		2038
BL28	BOILER - GAS (2400-3500 MBH)	B-2	0000000679	103	3,000	MBH	1.00	$75,976	2010	28		2038
BL28	BOILER - GAS (2400-3500 MBH)	B-3	0000000678	103	3,000	MBH	1.00	$75,976	2010	28		2038
BL28	BOILER - GAS (2400-3500 MBH)	B-4	0000000677	103	3,000	MBH	1.00	$75,976	2010	28		2038

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BL28	BOILER - GAS (2400-3500 MBH)	B-5	0000000673	103	3,000	MBH	1.00	$75,976	2010	28		2038
BL28	BOILER - GAS (2400-3500 MBH)	B-6	0000000674	103	3,000	MBH	1.00	$75,976	2010	28		2038
BL28	BOILER - GAS (2400-3500 MBH)	B-7	0000000675	103	3,000	MBH	1.00	$75,976	2010	28		2038
BL28	BOILER - GAS (2400-3500 MBH)	B-8	0000000676	103	3,000	MBH	1.00	$75,976	2010	28	7	2045
BL30	BOILER - GAS (5800-10000 MBH)	BL-04	0000000664	102	20,085	MBH	1.00	$858,377	1968	28		DR
CH03	CHILLER - WATER-COOLED CENTRIFUGAL OR SCREW (350-550 TONS)	TRANE	0000000731	107	410	TON	1.00	$567,611	2004	30		2034
CT07	COOLING TOWER (551-700 TONS)	EVAPSCO	0000000744	108	610	TON	1.00	$208,791	2004	29		2033
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	DAIKIN	0000004649	ROOF	1	TON	1.00	$2,290	2018	25		2043
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	DAIKIN	0000006828	M103	1	TON	1.00	$2,970	2018	30		2048
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	FC-6	0000000741	107	2	HP	1.00	$19,228	2004	35		2039
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CARNES	0000009382	ROOF	1	EA	1.00	$6,899	1997	25		2022
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2	0000000740	107	1	HP	1.00	$1,321	2004	35		2039
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	BRAUN		208	1	HP	0.15	$409	2000	20		2020
HV20	HVAC DISTRIBUTION NETWORKS - SHOPS / TRADES, DRY LABORATORY				14,000	SF	0.15	$36,755	1994	45		2039
PH01	PUMP - ELECTRIC (<=10 HP)	BP-1	0000000685	103	1	HP	1.00	$1,693	2010	30		2040

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	BP-2	0000000687	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	BP-3	0000000689	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	BP-4	0000000690	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	BP-5	0000000684	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	BP-6	0000000686	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	BP-7	0000000688	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	BP-8	0000000691	103	1	HP	1.00	$1,693	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)		0000006910	103	1	HP	1.00	$1,693	2014	30		2044
PH02	PUMP - ELECTRIC (10 - 15 HP)	CP-19	0000000692	103	15	HP	1.00	$22,406	2004	35		2039
PH02	PUMP - ELECTRIC (10 - 15 HP)	CP-8	0000000693	103	15	HP	1.00	$22,406	2004	35		2039
PH02	PUMP - ELECTRIC (10 - 15 HP)	CP-9	0000000694	103	15	HP	1.00	$22,406	2004	35		2039
PH03	PUMP - ELECTRIC (15 - 20 HP)	CHP-2	0000000737	107	20	HP	1.00	$22,219	2004	35		2039
PH03	PUMP - ELECTRIC (15 - 20 HP)	CWP-2	0000000734	107	20	HP	1.00	$22,219	2004	35		2039
TK23	EXPANSION TANK, STL PT (50-450 GAL)	ARMSTRONG	0000000738	107	60	GAL	1.00	$2,020	2004	30		2034
HU31	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (5- 9 TON)	TRANE	0000000653	ROOF	6	TON	1.00	$15,711	1994	25		2019

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA20	HVAC CONTROLS - TERMINAL ASSEMBLIES - SHOPS / TRADES, DRY LABORATORY				14,000	SF	1.00	$24,539	2010	20		2030
BA43	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - SHOPS / TRADES				14,000	SF	1.00	$7,218	2010	10		2020
BA66	HVAC CONTROLS - MAJOR INSTRUMENTATION - SHOPS / TRADES				14,000	SF	1.00	$3,711	2010	10		2020
TK41	FUEL TANK, ABOVE GROUND (3,000-6,999 GAL)	STEEL TANK	0000006324	SITE	5,000	GAL	1.00	$63,347	2014	35		2049
FS01	FIRE SPRINKLER SYSTEM - WET				14,000	SF	1.00	$189,401	2004	80		2084
FA01	FIRE ALARM SYSTEM - DEVICES			104	14,000	SF	1.00	$60,172	2004	18		2022
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		104	1	EA	1.00	$2,254	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK	14406480	103	1	EA	1.00	$13,857	2010	18		2028
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS		0000000728	107	2	EA	1.00	$152,434	2004	25		2029
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCCP	0000000672	103	6	EA	1.00	$457,303	1994	25		2019
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	1994 UPGRADE			9,000	SF	1.00	$152,951	1994	50		2044
SE20	ELECTRICAL DISTRIBUTION NETWORK - SHOPS / TRADES, DRY LABORATORY	2004 UPGRADE			5,000	SF	1.00	$84,973	2004	50		2054
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	HP-4MDS	0000000727	SITE	1,000	AMP	1.00	$74,984	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-1		103	1	HP	1.00	$727	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-2		103	1	HP	1.00	$727	2010	15		2025

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-3		103	1	HP	1.00	$727	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-4		103	1	HP	1.00	$727	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-5		103	1	HP	1.00	$727	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-6		103	1	HP	1.00	$727	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-7		103	1	HP	1.00	$727	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-8		103	1	HP	1.00	$727	2010	15		2025
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-19	0000005573	103	15	HP	1.00	$6,433	2010	16		2026
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-8	0000005572	103	15	HP	1.00	$6,433	2010	16		2026
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-9	0000005571	103	15	HP	1.00	$6,433	2010	16		2026
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	CHP-2	0000007629	107	20	HP	1.00	$7,904	2018	16		2034
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			4	EA	1.00	$2,034	2004	20		2024
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			2	EA	1.00	$1,017	2004	20		2024
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			7	EA	1.00	$5,401	2010	20		2030
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	1994 UPGRADE			9,000	SF	1.00	$47,536	1994	20	3	DR
LI20	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	2004 UPGRADE			5,000	SF	1.00	$26,409	2004	20		2024

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN02	GENERATOR - DIESEL (<30-100KW)	CATERPILLAR	0000000654	SITE	60	KW	1.00	$58,595	2004	25		2029
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	HP	0000000716	105	40	AMP	1.00	$3,480	2004	25		2029
GN13	SWITCH - AUTO TRANSFER, 480 V (30-60 AMP)	HP OPTIONAL	0000000712	105	40	AMP	1.00	$3,480	2004	25		2029
TK49	FUEL TANK, ABOVE GROUND (<1,250 GAL)	STEEL TANK	0000000656	SITE	500	GAL	1.00	$31,082	2004	35		2039
							Grand Total:	$5,840,312				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM	SINGLE GLAZED	4,800	SF	$1,177,011	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	7	LEAF	$14,046	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		7	EA	$6,625	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		3	EA	$3,561	DR
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		168	SF	$17,504	DR
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		1	EA	$2,095	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW	3	LEAF	$6,020	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		7,970	SF	$166,633	DR
C1020	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR		16	EA	$12,046	DR
C3010	WALL FINISH - TILE, CERAMIC / STONE, STANDARD		1,120	SF	$45,362	DR
C3020	FLOORING - VINYL SHEET, STANDARD		1,050	SF	$11,837	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD		630	SF	$22,218	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE	2,000	SF	$6,995	DR
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG	ORIGINAL	5	EA	$6,756	DR
D2010	PLUMBING FIXTURE - SHOWER VALVE AND HEAD		2	EA	$2,275	DR
D2010	PLUMBING FIXTURE - URINAL		1	EA	$1,079	DR
D2010	PLUMBING FIXTURE - WATER CLOSET, TANK-TYPE		1	EA	$649	DR
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS		3	EA	$5,085	DR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2090	AIR COMPRESSOR - UTILITY (< =5 HP)	ACOMP-2	3	HP	$6,847	DR
D3020	BOILER - GAS (5800-10000 MBH)	BL-04	20,085	MBH	$858,377	DR
D5020	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	1994 UPGRADE	9,000	SF	$47,536	DR
				TOTAL DEFERRED RENEWAL COST	**$2,420,556**	

2018

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY		1	EA	$1,664	2018
D2020	SUPPLY PIPING SYSTEM - SHOPS / TRADES, DRY LABORATORY		14,000	SF	$61,572	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$63,236**	

2019

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCCP	6	EA	$471,022	2019
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (5- 9 TON)	TRANE	6	TON	$16,183	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$487,205**	

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - SHOPS / TRADES		14,000	SF	$3,937	2020
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - SHOPS / TRADES		14,000	SF	$7,657	2020
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	BRAUN	1	HP	$434	2020
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,050	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$13,078**	

No Projected Component Replacement Cost for Asset No. 1060 for 2021

2022						
UNI-FORMAT	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	1	EA	$2,537	2022
D4030	FIRE ALARM SYSTEM - DEVICES		14,000	SF	$67,725	2022
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	CARNES	1	EA	$7,765	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$78,027**	

No Projected Component Replacement Cost for Asset No. 1060 for 2023

2024						
UNI-FORMAT	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5020	LIGHTING SYSTEM, INTERIOR - SHOPS / TRADES, DRY LABORATORY	2004 UPGRADE	5,000	SF	$31,533	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	4	EA	$2,429	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	2	EA	$1,214	2024
D2020	BACKFLOW PREVENTER (2-3 INCHES)	WILKENS ZURN	1	EA	$8,753	2024
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SP-6	1	EA	$848	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$44,778**	

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-1	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-2	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-3	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-4	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-5	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-6	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-7	1	HP	$894	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	BP-8	1	HP	$894	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$7,149**	

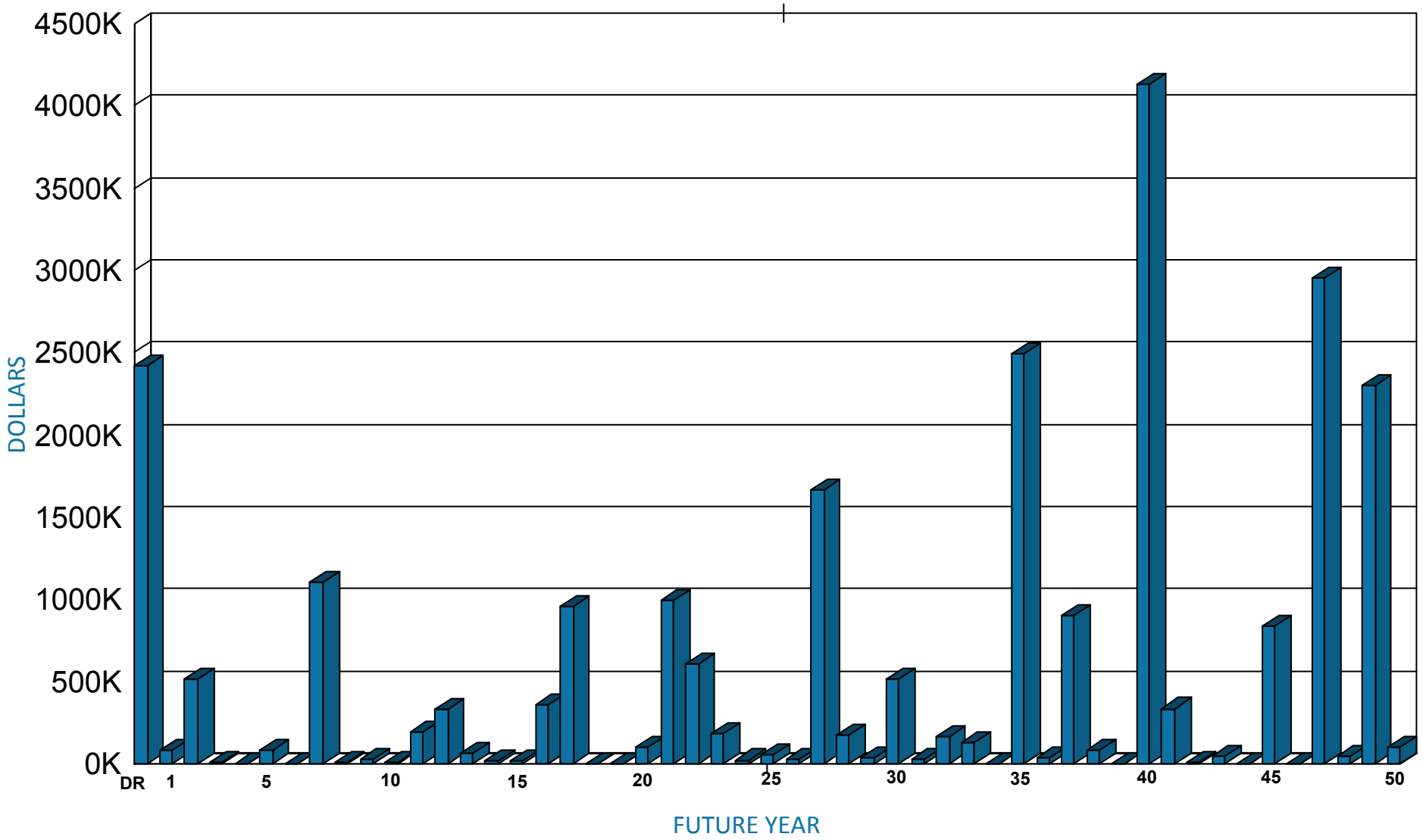
COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-19	15	HP	$8,149	2026
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-8	15	HP	$8,149	2026
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	CP-9	15	HP	$8,149	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$24,448	

No Projected Component Replacement Cost for Asset No. 1060 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $16.24

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

AC02

HEAT
PLANT

BLDG NO. 1060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/6/2018
Drawn by: A.W.
Project No. 18-064

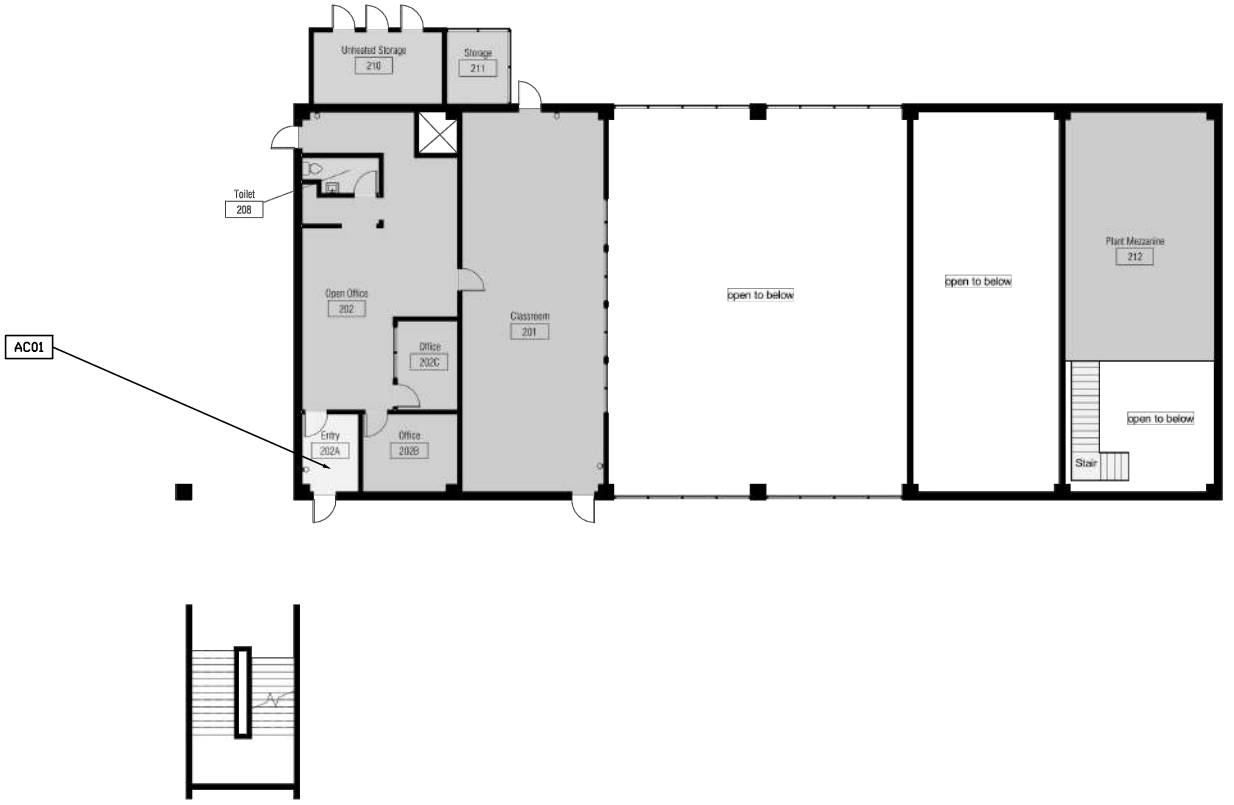
FIRST
FLOOR
PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF

FS02



AC02

HEAT
PLANT

BLDG NO. 1060

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/6/2018
Drawn by: A.W.
Project No. 18-064

SECOND
FLOOR
PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1060001a 8/22/2018
Roof and exterior finishes
East elevation

1060001e 8/22/2018
Exterior lighting
East elevation

1060002a 8/22/2018
Roof membrane and edge with no fall protection
Roof

1060002e 8/22/2018
Exterior lighting
East elevation

1060003a 8/22/2018
Roof membrane and roof-mounted equipment
Roof

1060003e 8/22/2018
Exterior lighting
Stairwell

1060004a 8/22/2018
Walkway at the second floor classroom entrance
West elevation

1060004e 8/22/2018
Exterior lighting
West elevation

1060005a 8/22/2018
Exterior finishes
North elevation

1060005e 8/22/2018
Exterior lighting
West elevation

1060006a 8/22/2018
Exit door and exterior finishes
North elevation

1060006e 8/22/2018
Transformer
Site

1060007a 8/22/2018
Exterior finishes and site conditions
East elevation

1060007e 8/22/2018
Exterior lighting
South elevation

1060008a 8/22/2018
Exterior finishes and site conditions
East elevation

1060008e 8/22/2018
Generator
Site

1060009a 8/22/2018
Detail at a typical window unit
East elevation

1060009e 8/22/2018
Panelboard
Site

1060010a 8/22/2018
Classroom entrance and walkway guardrail
West elevation

1060010e 8/22/2018
Diesel storage tank
Site

1060011a 8/22/2018
Exterior finishes and site conditions
West elevation

1060011e 8/22/2018
Exterior lighting
East elevation

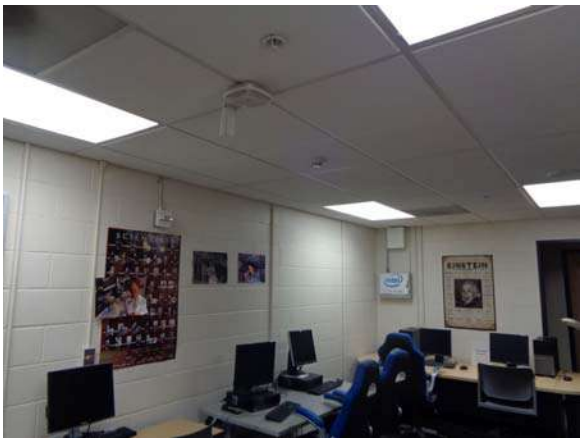
1060012a 8/22/2018
Exterior stair at Automotive Metals building
West elevation

1060012e 8/22/2018
Diesel storage tank
Site

1060013a 8/22/2018
Office area entrance and exterior finishes
West elevation

1060013e 8/22/2018
Exit sign, fire extinguisher, and pull station
Second floor, room 202A

1060014a 8/22/2018
Exterior finishes and site conditions
West elevation



1060014e 8/22/2018
Interior lighting
Second floor, room 202

1060015a 8/22/2018
Exterior finishes and site conditions
South elevation

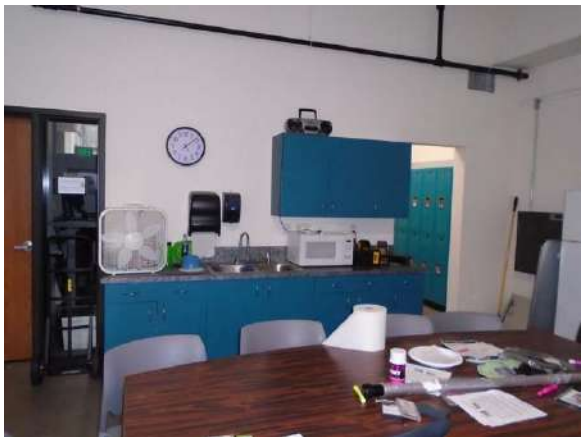
1060015e 8/22/2018
Exhaust fan/light fixture
Second floor, room 208

1060016a 8/22/2018
Nonaccessible restroom with water closet and lavatory
Room 202A

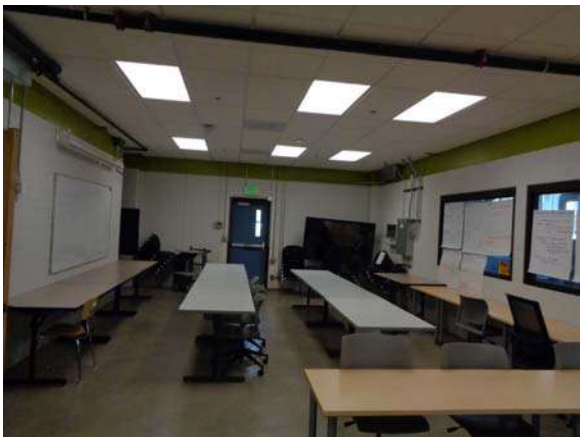
1060016e 8/22/2018
Interior lighting
Second floor, room 202

1060017a 8/22/2018
Classroom exit door, hardware, and sign
Room 201

1060017e 8/22/2018
Interior lighting
Second floor, room 201



1060018a 8/22/2018
Office area casework and sink
Room 106



1060018e 8/22/2018
Interior lighting
Second floor, room 201

1060019a 8/22/2018
Fixtures, finishes, and nonaccessible shower
Room 106D

1060019e 8/22/2018
Panelboard
Second floor, room 201

1060020a 8/22/2018
Shower fixture and finishes
Room 106D

1060020e 8/22/2018
Water heaters
First floor, room 106

1060021a 8/22/2018
Women's restroom fixtures and finishes
Room 106B

1060021e 8/22/2018
Interior lighting
First floor, room 106

1060022a 8/22/2018

Nonaccessible shower

Room 106B

1060022e 8/22/2018

Lavatories and water closets

First floor, room T1-02

1060023a 8/22/2018

Detail at the window system

West exterior

1060023e 8/22/2018

Interior lighting

First floor, room T1-02

1060024a 8/22/2018

Utility sink

Room 103

1060024e 8/22/2018

Lavatories, urinal, and water closet

First floor, room T1-01

1060025a 8/22/2018

Doors with noncompliant hardware

Room 103

1060025e 8/22/2018

Piping

First floor, room T1-01 pipe chase

1060026a 8/22/2018

Main room finishes and door with exit signage

Room 103

1060026e 8/22/2018

Piping

First floor, room T1-01 pipe chase

1060027a 8/22/2018

Overhead coiling steel door and personnel door

Room 101

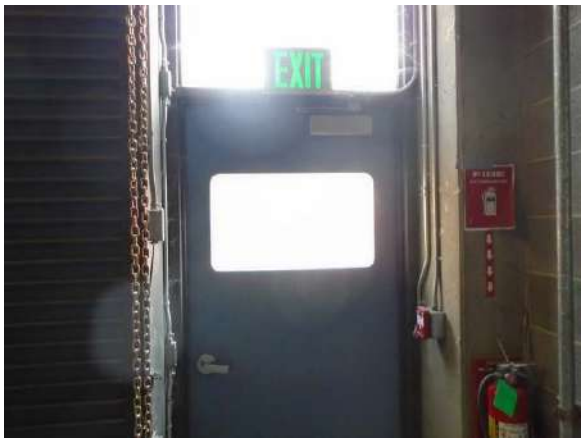
1060027e 8/22/2018

Digital thermostat

First floor, room T1-01 pipe chase

1060028a 8/22/2018
Mezzanine stair with noncompliant open risers
Room 101

1060028e 8/22/2018
Backflow preventer
First floor, room 107



1060029a 8/22/2018
Exit door, hardware, and signage
Room 101

1060029e 8/22/2018
Pump equipment
First floor, room 107

1060030e 8/22/2018
Expansion tank
First floor, room 107

1060031e 8/22/2018
Motor control center
First floor, room 107

1060032e 8/22/2018

Chiller

First floor, room 107

1060033e 8/22/2018

Exhaust fan

First floor, room 107

1060034e 8/22/2018

Evaporator

First floor, room BDF

1060035e 8/22/2018

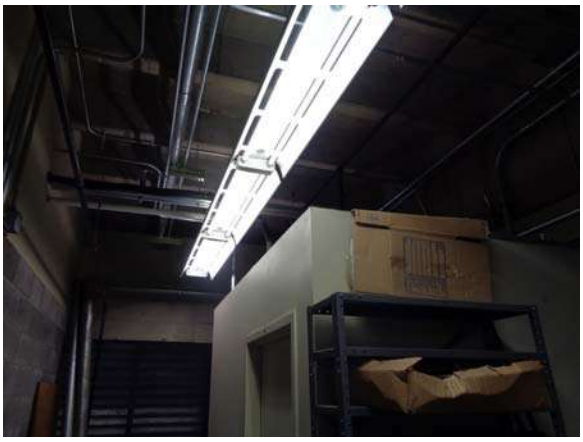
Safepath panel

First floor, room BDF

1060036e 8/22/2018

Aged fire alarm panels

First floor, room 104



1060037e 8/22/2018

Interior lighting

First floor, room 104

1060038e 8/22/2018

ATS and panelboards

First floor, room 105

1060039e 8/22/2018

ATS

First floor, room 105

1060040e 8/22/2018

Panelboard

First floor, room 105

1060041e 8/22/2018

Panelboards

First floor, room 105

1060042e 8/22/2018

Emergency light

First floor, room 105

1060043e 8/22/2018

Transformer and panelboard

First floor, room 105

1060044e 8/22/2018
Wash basin, eyewash station, and aged piping
First floor, room 103

1060045e 8/22/2018
Motor control center
First floor, room 103

1060046e 8/22/2018
Boilers
First floor, room 103

1060047e 8/22/2018
Pump equipment
First floor, room 103

1060048e 8/22/2018
Compressor
First floor, room 103

1060049e 8/22/2018
Water heaters
First floor, room 103

1060050e 8/22/2018

Pump equipment

First floor, room 103

1060051e 8/22/2018

Pump equipment

First floor, room 103

1060052e 8/22/2018

Variable frequency drive

First floor, room 103

1060053e 8/22/2018

Boiler

First floor, room 102

1060054e 8/22/2018

Exit signage

First floor, room 102

1060055e 8/22/2018

Interior lighting

First floor, room 102

1060056e 8/22/2018

Backflow preventer

First floor, room 102

1060057e 8/22/2018

Piping

First floor, tunnel

1060058e 8/22/2018

HVAC piping

First floor, room 103

1060059e 8/22/2018

Switchboard

Site

1060060e 8/22/2018

Rooftop package unit

Roof

1060061e 8/22/2018

Condensing unit

Roof

1060062e 8/22/2018

Exhaust fan

Roof

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	1060
Asset Name	Heat Plant
Year Built or Last Energy Renovation	1968

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

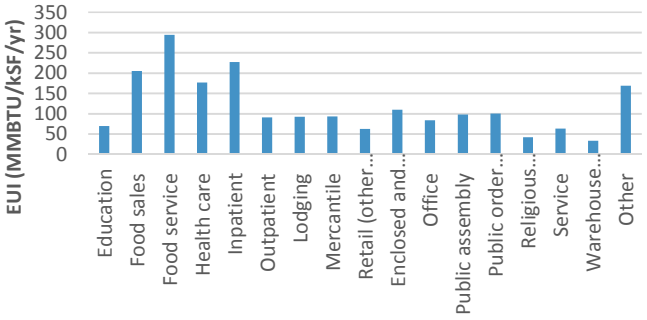
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Shops/Trades, Dry Lab
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**63.4**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 44.4
Energy Efficient (consumes 10% to 30% less energy)	44.4 <= EUI <= 57.1
Similar (consumes within 10% less or 10% more energy)	57.1 < EUI < 69.7
Energy Inefficient (consumes 10% to 30% more energy)	69.7 <= EUI <= 82.4
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 82.4

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

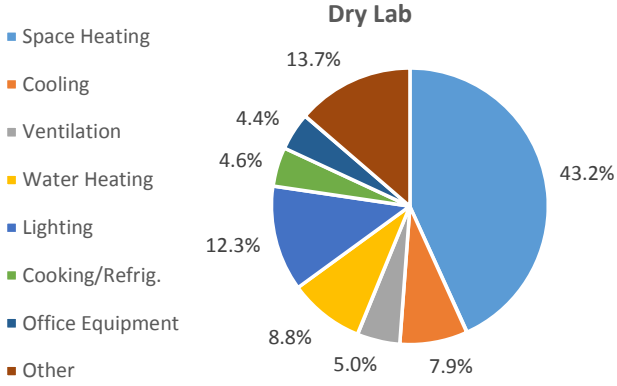


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: SHOPS/TRADES, DRY LAB	
Space Heating	43.2%
Cooling	7.9%
Ventilation	5.0%
Water Heating	8.8%
Lighting	12.3%
Cooking/Refrig.	4.6%
Office Equipment	4.4%
Other	13.7%
Total	99.9%

Figure 2. Energy End Use Profile: Shops/Trades, Dry Lab



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Cooling Tower Free Cooling	INSTALL A PLATE FRAME HEAT EXCHANGER. A plate frame heat exchanger will allow free cooling during mild summer weather periods so that the chiller does not need to operate.	CAP
HVAC - Cooling Tower Meter	INSTALL A COOLING TOWER METER. A water meter on the cooling tower can be used to determine how much water is evaporated, lost to overflow, or lost to drift. This information can be sent to the water provider to reduce the cost of sewer treatment.	LC/NC
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Library

Asset 1080

Inspected August 20, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

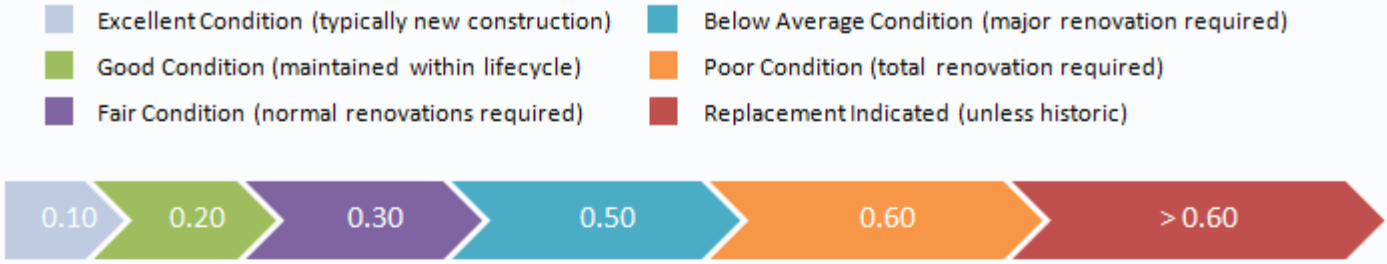
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

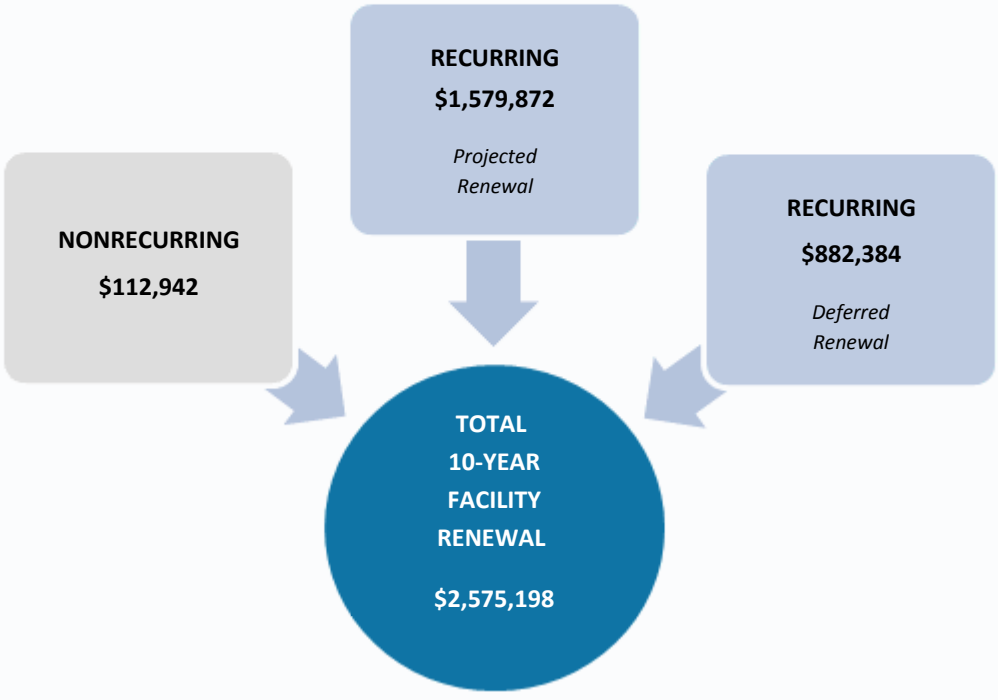
ASSET CODE	1080	**CURRENT REPLACEMENT VALUE**	$24,331,000
ASSET NAME	LIBRARY	**FACILITY CONDITION NEEDS INDEX**	0.11
ASSET USE	Library	**FACILITY CONDITION INDEX**	0.04
YEAR BUILT	1994	**10-YEAR $/SF**	39.51
GSF	65,185		
INSPECTION DATE	08/20/2018		

FCNI Scale

The FCNI for this asset is **0.11**



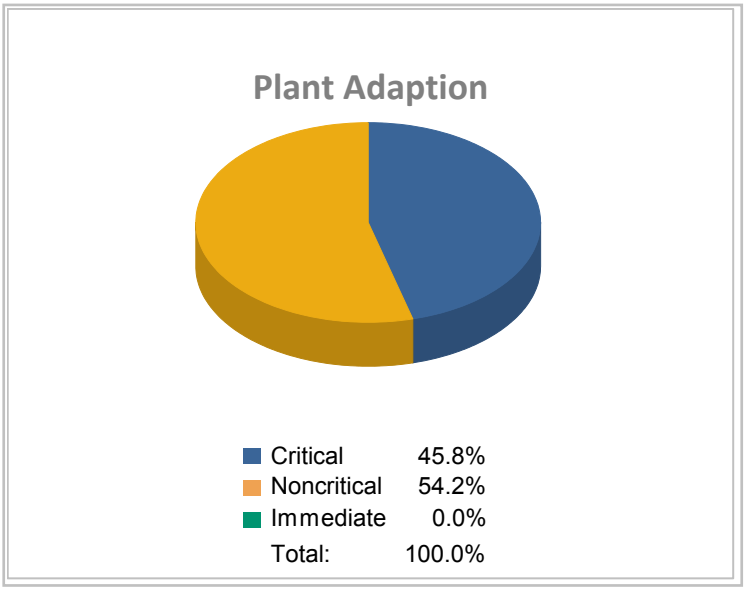
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

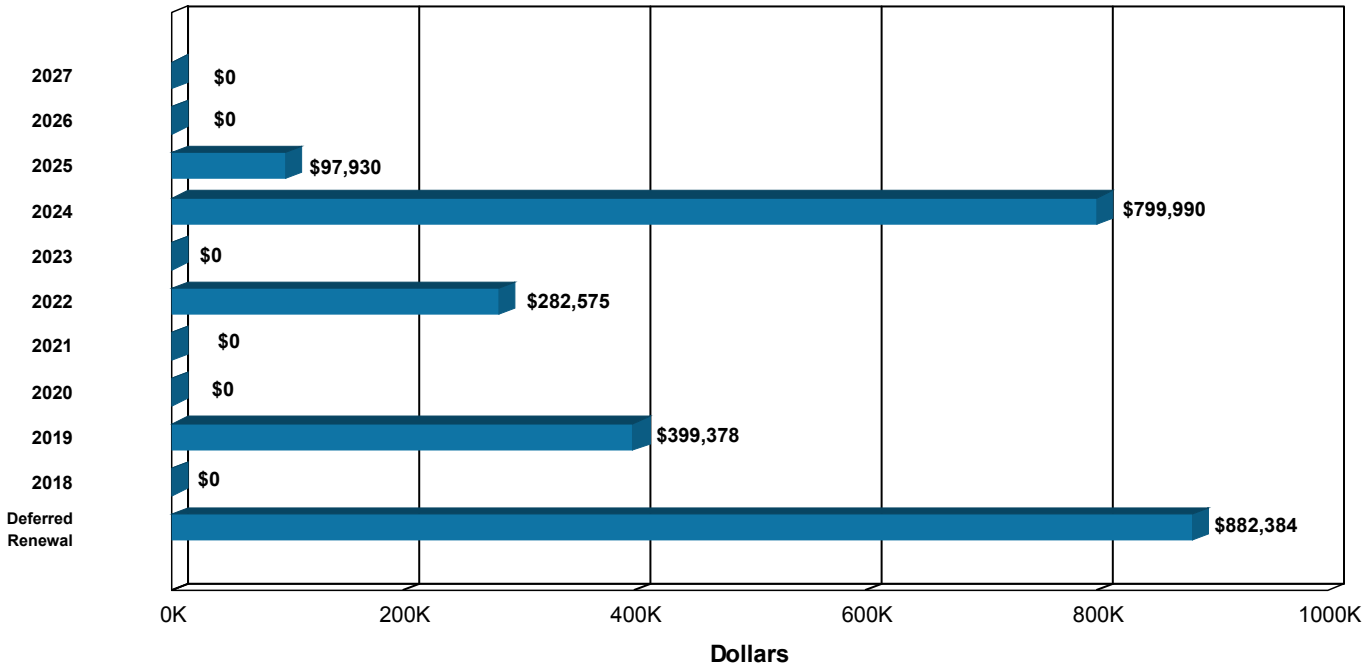
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$51,694**
3 - Noncritical	**$61,248**



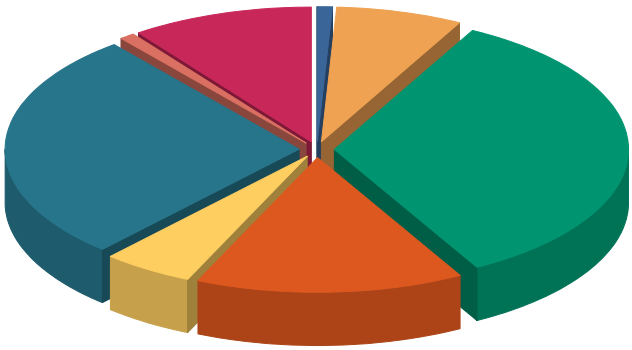
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$19,381	1%
Electrical	$177,954	7%
Exterior	$885,353	34%
Fire/Life Safety	$375,982	15%
Health	$0	0%
HVAC	$130,425	5%
Interiors	$709,281	28%
Plumbing	$18,839	1%
Site	$0	0%
Vert. Trans.	$257,984	10%
TOTAL	**$2,575,198**	

ASSET SUMMARY

The Library on the Portland Community College, Sylvania campus is a two-story building with a flat roof and metal siding and concrete exterior walls. The roof of the central atrium is glass and a large circular skylight over the second floor study area provides additional natural light to the interior. The Library was constructed in 1994 and has 65,185 gross square feet of stacks, study spaces, and offices.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The Library is located on a sloping site east of the Campus Center and south of the Performing Arts Center. Pedestrian access is provided by concrete sidewalks on all sides of the building. A glass covered walkway connects the library to the east side of the Campus Center and a steel truss structure connects from the library roof to the tower at the entrance of the Performing Arts Center. Parking is available in shared campus lots. The landscaping is minimal but appropriate and in good condition. No site upgrades should be necessary within the report scope.

Exterior Structure

The roof is a silver-coated, asphaltic, multi-ply membrane which appears to be near the end of its normal lifecycle. It is recommended that the membrane be replaced in the next few years. The skylights are in acceptable condition for another ten years of use. The exterior walls are cast concrete and corrugated metal siding with anodized flat metal panels. The concrete appears to be in good condition but should be cleaned and recaulked, where necessary, within the next ten years. The metal panels are nearing the end of their anticipated lifecycle and should be recaulked or replaced in the next few years. The double-glazed, aluminum-framed windows are in good condition and should outlast the scope of this report. The building has both flush, hollow-metal and aluminum and glass storefront exterior doors. The storefront units will reach the end of their expected lifecycle in the next ten years and should be refurbished or replaced. The hollow-metal doors are in good condition and no work is recommended at this time.

Interior Finishes/Systems

Floor finishes include carpet and ceramic tile. The ceramic tile floors are in good condition and should outlast the scope of this report. The carpets vary in age and condition and all of them should be replaced within the next ten years. The interior walls are painted or finished with wood paneling or ceramic tile. While the ceramic tile and wood paneled walls are in good condition, the painted surfaces should be repainted within ten years. The ceilings are painted or suspended acoustical tile systems, all of which are in good condition. Break room and workroom casework is in normal condition but will reach the end of its anticipated service life in the next ten years and should be replaced at that time. The circulation desk

is in good condition and should outlast the scope of this report. The interior doors are in good condition and no work is recommended.

Accessibility

The Library is new enough to have been designed with accessible features and few barriers to accessibility were observed during the site visit. The entrance doors are at grade and equipped with powered door openers. The restrooms, most of the door hardware and signage, and the interior stair railings meet accessibility standards. However, the elevator is only partially compliant with current ADA legislation and it is recommended that a compliant hands-free phone be installed, or the cover over the existing phone be removed in order meet the current standards.

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude four inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Dual-level drinking fountains which are otherwise compliant but missing required guards should have cane guards or alcove walls added.

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever-handle hardware be installed on all doors that still have knobs.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access is adequate and marked with illuminated exit signage. Emergency lighting is provided by select light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The interior glazing in the sidelites of many of the second floor study rooms is not marked as safety rated. In order to promote a safe environment for building users as well as conform to current codes, it is recommended that this condition be rectified. Remove the existing nonrated interior glazing and replace it with glass having the proper safety rating.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room 218. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The devices may be original and have reached the end of their normal service life, while the panel was installed in 2004. Upgrade of the entire system is recommended. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility is on the campus hot water loop for the heating medium. Two air-cooled chillers provide chilled water for cooling. Pumps circulate the hot and chilled water while expansion tanks support the heating system. The HVAC equipment appears to be well maintained, but replacement of some of the pumps and the expansion tanks may need to be scheduled within the scope of this report.

The Library incorporates two indoor and one exterior air handling units (AHUs) for heating and cooling. The exterior unit was installed in 2012 and the indoor units are original. The AHUs are each equipped with a supply and return fan and contain hot and chilled water coils. Distribution equipment consists of metal ductwork equipped with variable air volume (VAV) boxes. Controls are a digital application that are believed to have been recently upgraded. Cooling is also provided by three Mitsubishi split systems that have DX refrigerant for cooling only. The HVAC system appears to be an adequate application and is in good condition and the components have remaining service life, although a partial control upgrade should be expected toward the end of the next ten years.

Facility exhaust is provided by a utility set type fan and a rooftop centrifugal fan. The fans serve restrooms, smoke exhaust, and general exhaust needs. While they are in adequate condition, the rooftop centrifugal unit is displaying some rust and nearing the end of its service life.

Electrical

Power is supplied to the facility at 480/277 volts via from a transformer to a 1,200 amp exterior switchboard. The transformer is believed to be owned by the local utility. Power is then supplied to a 1,200 amp indoor switchboard on the lower level for distribution. The main electrical equipment appears to be well maintained and in good condition with no recommendations.

The electrical distribution system consists of panelboards and dry-type transformers that distribute power at 480/277 volts or is stepped down to 120/208 volts via the transformers. Circuits are energized from the panelboards for mechanical, lighting, and general purpose loads. The system appears to be well marked and properly encased. The distribution system has substantial remaining service life with no recommendations. Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have serve the supply fans, return fans, and chilled water pumps. Installed in 2015, they are in excellent condition.

The interior lighting consists of surface-mount, suspended, and lay-in fixtures with acrylic and parabolic screen lenses lamped with T8 fluorescent or LED bulbs. Occupancy sensors in select rooms conserve energy. Additional lighting is proved by recessed can-type fixtures lamped with compact fluorescent bulbs. The interior lighting scheme is in good condition and is believed to been partially upgraded. All of the new lighting has remaining service life while the remaining original equipment has reached lifecycle depletion.

The exterior lighting consists of wall-mounted HID, eave-mounted recessed, and wall-mounted fluorescent fixtures. Additionally, there are pole-mounted fixtures with LED bulbs. The lighting scheme appears to provide adequate coverage although the inspection was performed during daylight. There are no recommendations for the exterior lighting.

Emergency power is provided by a district source. A GE Zenith automatic transfer switch provides the power for distribution. Installed in 2004, it is in good condition with no recommendations at this time.

Plumbing

Domestic water is supplied through a copper piping network. A backflow preventer on the domestic water system prevents cross contamination. Drain piping is cast-iron with no hub connections and some plastic. The piping systems, where they could be viewed, appear to be in adequate condition and have remaining service life beyond the scope of this report. The backflow preventer, however, has reached the end of its service life.

Domestic hot water is produced by an A.O. Smith, commercial-grade electric water heater. A pump assists in circulation and an expansion tank is also used. While the equipment is in good condition, both the water heater and expansion tank will reach lifecycle depletion in the next ten years and may need to be considered for replacement.

A Quincy air compressor in the penthouse was once utilized for the HVAC controls. The unit is not in operation as the controls are believed to have been upgraded. The compressor is in good condition and will reach the end of its service life in the next year.

Plumbing fixtures include water closets, urinals, lavatories, utility sinks, and a kitchen sink. The kitchen sink is beyond its useful lifecycle and should be replaced. The remaining fixtures are in good condition and should serve another ten or more years.

Vertical Transportation

The facility has a Montgomery hydraulic passenger elevator that was installed in 1994. The unit serves two floors and utilizes solid state controls for operation. The elevator appears to be in adequate condition and was operating properly on the day of inspection. However, it is approaching the end of its normal lifecycle and should be considered for modernization.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Duluth, GA 30096

Project Manager

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770.674.3141
carlm@isescorp.com

Date of Inspection

August 20, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	7,480	11,901	0	0	0	0	0	0	0	0	0	0	0	$19,381
EXTERIOR	0	0	0	44,004	0	135,339	0	0	0	0	706,010	0	0	0	$885,353
INTERIOR	0	0	0	378,480	0	0	0	0	280,321	0	50,479	0	0	0	$709,281
PLUMBING	0	0	0	1,779	0	2,282	0	0	0	0	14,777	0	0	0	$18,839
HVAC	0	0	0	0	0	3,773	0	0	0	0	28,723	97,930	0	0	$130,425
FIRE/LIFE SAFETY	0	44,214	49,347	280,167	0	0	0	0	2,254	0	0	0	0	0	$375,982
ELECTRICAL	0	0	0	177,954	0	0	0	0	0	0	0	0	0	0	$177,954
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	257,984	0	0	0	0	0	0	0	0	$257,984
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$51,694	$61,248	$882,384	$0	$399,378	$0	$0	$282,575	$0	$799,990	$97,930	$0	$0	$2,575,198
TOTAL NONRECURRING PROJECT NEEDS			$112,942	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,462,256	

CURRENT REPLACEMENT VALUE	$24,331,000
FACILITY CONDITION NEEDS INDEX	0.11
FACILITY CONDITION INDEX	0.04

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
65,185	$2,575,198	$39.51

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$19,381	$0	$19,381
EXTERIOR	$0	$885,353	$885,353
INTERIOR	$0	$709,281	$709,281
PLUMBING	$0	$18,839	$18,839
HVAC	$0	$130,425	$130,425
FIRE/LIFE SAFETY	$93,561	$282,421	$375,982
ELECTRICAL	$0	$177,954	$177,954
SITE	$0	$0	$0
VERT. TRANS	$0	$257,984	$257,984
HEALTH	$0	$0	$0
TOTALS	**$112,942**	**$2,462,256**	**$2,575,198**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1080FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	44,214
1080AC01	ELEVATOR CAB ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,963
1080AC03	DOOR ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	4,517
1080AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	11,901
1080FS01	REPLACE NONRATED INTERIOR GLAZING	C1010	3	Plant Adaption	49,347
				TOTAL	**$112,942**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1080	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			B2030	Deferred Renewal	20,311
1080	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			2ND FLR BALCONY	B2030	Deferred Renewal	4,732
1080	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			MECH RMS	B2030	Deferred Renewal	9,464
1080	DR36	DOOR PANIC HARDWARE, EXTERIOR			NEAR OFFICE 124	B2030	Deferred Renewal	2,374
1080	DR36	DOOR PANIC HARDWARE, EXTERIOR			ENTRY DRS	B2030	Deferred Renewal	7,122
1080	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	98,160
1080	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	ORIGINAL			C3020	Deferred Renewal	280,321
1080	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	773
1080	BF01	BACKFLOW PREVENTER (<=1 INCH)	DOMESTIC		301	D2020	Deferred Renewal	1,006
1080	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	Deferred Renewal	280,167
1080	LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY	ORIGINAL			D5020	Deferred Renewal	177,954
1080	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				B2010	2019	102,094
1080	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			2ND FLR BALCONY	B2030	2019	15,111
1080	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			ENTRY DRS	B2030	2019	18,133
1080	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MONTGOMERY	0000004399	123	D1010	2019	257,984
1080	PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	QUINCY	0000000807	303	D2090	2019	2,282

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1080	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000000769	ROOF	D3040	2019	3,773
1080	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2010 INSTALL			C3020	2022	280,321
1080	FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		218	D4030	2022	2,254
1080	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				B2010	2024	52,724
1080	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	2024	21,881
1080	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	2024	631,406
1080	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS, BRK RM	C1030	2024	50,479
1080	TK09	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	0000000837	301	D2020	2024	1,684
1080	WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-1	0000000830	301	D2020	2024	13,094
1080	PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	0000006325	301	D3040	2024	12,678
1080	PH01	PUMP - ELECTRIC (<=10 HP)	CWP-2	0000006326	301	D3040	2024	12,678
1080	TK23	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	0000000818	303	D3040	2024	1,684
1080	TK23	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	0000000837	301	D3040	2024	1,684
1080	BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				D3060	2025	64,324
1080	BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				D3060	2025	33,605

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
						TOTAL	$2,462,256

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	1080FS02	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$44,214
2	1080AC01	ELEVATOR CAB ACCESSIBILITY UPGRADES	2	$2,963
3	1080AC03	DOOR ACCESSIBILITY UPGRADES	2	$4,517
4	1080FS01	REPLACE NONRATED INTERIOR GLAZING	3	$49,347
5	1080AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$11,901
		TOTAL FOR PLANT ADAPTION		**$112,942**
		GRAND TOTAL:		**$112,942**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	1020AC03	1	Plant Adaption	LOADING DOCK HANDRAIL UPGRADE	$8,759
5	1020AC01	2	Plant Adaption	ELEVATOR CAB ACCESSIBILITY UPGRADES	$2,963
6	1020AC04	3	Plant Adaption	COPY: INTERIOR DOOR ACCESSIBILITY UPGRADES	$1,627
7	1020AC02	3	Plant Adaption	INTERIOR SIGNAGE ACCESSIBILITY UPGRADES	$1,215
				TOTAL FOR ACCESSIBILITY	**$14,564**
1	1020FS02	1	Plant Adaption	FIRE RATING COMPROMISE	$27,677
3	1020FS03	2	Corrective Action	IMPROVE EGRESS PATHWAY DESIGNATION	$8,202
4	1020FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$33,161
				TOTAL FOR FIRE/LIFE SAFETY	**$69,040**
				GRAND TOTAL:	**$83,604**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1080FS02	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	12/4/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	40	$304	$12,160	$488	$19,520	$31,680
Base Material/Labor Costs				**$12,160**		**$19,520**	
Indexed Material/Labor Costs				**$12,087**		**$19,676**	**$31,763**
Construction Mark Up at 20.0%							**$6,353**
Original Construction Cost							**$38,116**
Date of Original Estimate: 12/4/2018						**Inflation**	**$0**
Current Year Construction Cost							**$38,116**
Professional Fees at 16.0%							**$6,099**
TOTAL PROJECT COST							**$44,214**

All costs shown as Present Value

ELEVATOR CAB ACCESSIBILITY UPGRADES

Project Number:	1080AC01	**Category Code:** AC3A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/20/2018	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	407	Not Applicable	Floor-wide: Floor(s) 1

Description

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. The elevator is only partially compliant with current ADA legislation. It is recommended that a compliant, hands-free phone be installed, or the cover over the existing phone be removed in order meet the current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, hands-free elevator emergency telephone	EA	1	$1,227	$1,227	$902	$902	$2,129
			Base Material/Labor Costs	**$1,227**		**$902**	
			Indexed Material/Labor Costs	**$1,219**		**$909**	**$2,129**
					Construction Mark Up at 20.0%		**$426**
					Original Construction Cost		**$2,554**
Date of Original Estimate:	8/20/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$2,554**
					Professional Fees at 16.0%		**$409**
					TOTAL PROJECT COST		**$2,963**

All costs shown as Present Value

DOOR ACCESSIBILITY UPGRADES

Project Number:	1080AC03	**Category Code:** AC3C	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/20/2018	**Element:**	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, commercial-grade door hardware	EA	6	$387	$2,322	$155	$930	$3,252
Base Material/Labor Costs				**$2,322**		**$930**	
Indexed Material/Labor Costs				**$2,308**		**$937**	**$3,245**
Construction Mark Up at 20.0%							**$649**
Original Construction Cost							**$3,894**
Date of Original Estimate: 8/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$3,894**
Professional Fees at 16.0%							**$623**
TOTAL PROJECT COST							**$4,517**

All costs shown as Present Value

REPLACE NONRATED INTERIOR GLAZING

Project Number:	1080FS01	**Category Code:** FS5C	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	8/20/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	2406.4.1	Not Applicable	Floor-wide: Floor(s) 2

Description

The interior glazing in the sidelites of many of the second floor study rooms is not marked as safety rated. In order to promote a safe environment for building users, as well as conform to current codes, it is recommended that this condition be rectified. Remove the existing nonrated interior glazing and replace it with glass having the proper safety rating.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace nonrated interior glazing with safety-rated glazing in existing frame	SF	240	$106	$25,452	$41.96	$10,070	$35,522
Base Material/Labor Costs				**$25,452**		**$10,070**	
Indexed Material/Labor Costs				**$25,299**		**$10,151**	**$35,450**
Construction Mark Up at 20.0%							**$7,090**
Original Construction Cost							**$42,540**
Date of Original Estimate: 8/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$42,540**
Professional Fees at 16.0%							**$6,806**
TOTAL PROJECT COST							**$49,347**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1080AC02	**Category Code:** AC3F	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/20/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.2	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude four inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. Dual-level drinking fountains which are otherwise compliant but missing required guards should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	2	$932	$1,865	$3,321	$6,643	$8,508
			Base Material/Labor Costs	**$1,865**		**$6,643**	
			Indexed Material/Labor Costs	**$1,853**		**$6,696**	**$8,550**
					Construction Mark Up at 20.0%		**$1,710**
					Original Construction Cost		**$10,259**
Date of Original Estimate: 8/20/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$10,259**
					Professional Fees at 16.0%		**$1,642**
					TOTAL PROJECT COST		**$11,901**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				3,460	SF	$52,724	1994	30		2024
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				4,320	SF	$102,094	1994	25		2019
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				9,500	SF	$21,881	1994	30		2024
WN03	GLASS, CURTAIN WALL, STANDARD				2,160	SF	$409,411	1994	60		2054
WN05	GLASS, STOREFRONT				2,160	SF	$304,961	1994	40		2034
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			ENTRY DRS	6	LEAF	$18,133	1994	25		2019
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			2ND FLR BALCONY	5	LEAF	$15,111	1994	25		2019
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			MECH RMS	10	LEAF	$20,066	1994	40		2034
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			NEAR OFFICE 124	2	LEAF	$4,013	1994	40		2034
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			3	EA	$20,311	1994	20	3	DR
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS		ENTRY DRS	3	EA	$20,311	2010	20		2030
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			2ND FLR BALCONY	5	EA	$4,732	1994	12	11	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			MECH RMS	10	EA	$9,464	1994	12	11	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR			ENTRY DRS	6	EA	$7,122	1994	12	11	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR			NEAR OFFICE 124	2	EA	$2,374	1994	12	11	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				30,200	SF	$631,406	1994	30		2024
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM				500	SF	$8,543	1994	40		2034
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME			NORTH STACKS	450	SF	$128,778	1994	35		2029
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME			ATRIUM	2,260	SF	$646,752	1994	35		2029
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				80	LEAF	$176,915	1994	60		2054
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR				80	EA	$60,232	1994	35		2029
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS, BRK RM	90	LF	$50,479	1994	30		2024
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			CIRCULATION DESK	60	LF	$51,615	1994	40		2034
IW01	WALL FINISH - APPLIED, STANDARD				35,170	SF	$98,160	1994	12	11	DR
IW08	WALL FINISH - WOOD PANEL, STANDARD				1,950	SF	$40,662	1994	40		2034
IW10	WALL FINISH - TILE, GLASS MOSAICS				1,950	SF	$217,836	1994	60		2054
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	ORIGINAL			23,530	SF	$280,321	1994	12	11	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2010 INSTALL			23,530	SF	$280,321	2010	12		2022
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				2,480	SF	$87,461	1994	40		2034
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	STANDARD			20,510	SF	$228,280	1994	45		2039
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	WOOD & METAL			25,070	SF	$338,629	1994	45		2039

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MONTGOMERY	0000004399	123	1	EA	$257,984	1994	25		2019
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				16	EA	$21,619	1994	35		2029
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	$773	1994	20	3	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	$3,329	1994	50		2044
FX10	PLUMBING FIXTURE - URINAL				5	EA	$5,393	1994	35		2029
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				17	EA	$28,814	1994	35		2029
BF01	BACKFLOW PREVENTER (<=1 INCH)	DOMESTIC		301	1	EA	$1,006	1994	20	3	DR
PS10	SUPPLY PIPING SYSTEM - LIBRARY				65,185	SF	$311,096	1994	50		2044
TK09	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	0000000837	301	50	GAL	$1,684	1994	30		2024
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-1	0000000830	301	82	GAL	$13,094	1994	30		2024
PD10	DRAIN PIPING SYSTEM - LIBRARY				65,185	SF	$466,008	1994	60		2054
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	QUINCY	0000000807	303	1	HP	$2,282	1994	25		2019
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	ACC-1	0000006800	ROOF	120	TON	$151,488	2012	30		2042
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	ACC-2	0000000805	ROOF	90	TON	$113,616	2006	30		2036
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005316	ROOF	2	TON	$2,107	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004653	ROOF	2	TON	$2,107	2004	25		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000000821	ROOF	4	TON	$4,213	2004	25		2029
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000006816	IDF-1	2	TON	$2,138	2004	30		2034
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000006815	212	2	TON	$2,138	2004	30		2034
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	MITSUBISHI	0000006922	212	4	TON	$2,754	2004	30		2034
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU-1	0000000824	302	40	HP	$221,108	1994	35		2029
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU-2	0000000803	304	40	HP	$221,108	1994	35		2029
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-4	0000005307	ROOF	20	HP	$304,771	2012	25		2037
FN02	FAN - AXIAL, RETURN, 1.5" SP (3-5 HP) 13,200 CFM	AHU-4 RF		ROOF	5	HP	$11,529	2012	35		2047
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	AHU-1 RF		302	15	HP	$29,431	1994	35		2029
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	AHU-2 RF		304	15	HP	$29,431	1994	35		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000000769	ROOF	1	EA	$3,773	1994	25		2019
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-1	0000000835	301	1	HP	$5,466	1994	40		2034
HV10	HVAC DISTRIBUTION NETWORKS - LIBRARY				65,185	SF	$2,484,164	1994	45		2039
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	0000006325	301	7	HP	$12,678	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-2	0000006326	301	7	HP	$12,678	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006801	301	1	HP	$1,693	2010	30		2040

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000006798	303	3	HP	$5,078	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000006799	303	3	HP	$5,078	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-3	0000006327	303	3	HP	$5,078	2016	30		2046
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-4	0000006328	303	3	HP	$5,078	2016	30		2046
TK23	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	0000000818	303	50	GAL	$1,684	1994	30		2024
TK23	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	0000000837	301	50	GAL	$1,684	1994	30		2024
BA10	HVAC CONTROLS - TERMINAL ASSEMBLIES - LIBRARY				65,185	SF	$226,592	2015	20		2035
BA33	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY				65,185	SF	$64,324	2015	10		2025
BA56	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY				65,185	SF	$33,605	2015	10		2025
FS01	FIRE SPRINKLER SYSTEM - WET				65,185	SF	$881,864	1994	80		2074
FA01	FIRE ALARM SYSTEM - DEVICES				65,185	SF	$280,167	1994	18	5	DR
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		218	1	EA	$2,254	2004	18		2022
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		218	1	EA	$2,254	2010	18		2028
SE10	ELECTRICAL DISTRIBUTION NETWORK - LIBRARY				65,185	SF	$766,444	1994	50		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDP-MDL	0000000861	134	1,200	AMP	$89,981	1994	40		2034
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	GE	0000001205	SITE	1,200	AMP	$89,981	2004	40		2044

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	CWP-1	0000005321	301	7	HP	$4,632	2015	15		2030
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	CWP-2	0000005322	301	7	HP	$4,632	2015	15		2030
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-1 RET	0000005319	302	15	HP	$6,433	2015	16		2031
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-2 RET	0000005315	304	15	HP	$6,433	2015	16		2031
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU-1 SUP	0000005318	302	40	HP	$12,316	2015	18		2033
VF08	VARIABLE FREQUENCY DRIVE (30-40 HP)	AHU-2 SUP	0000005314	304	40	HP	$12,316	2015	18		2033
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	T8 FL, WALL-MOUNT			20	EA	$10,171	2015	20		2035
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	RECESSED, EAVE-MOUNT			2	EA	$1,017	2015	20		2035
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			3	EA	$2,315	2015	20		2035
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	3	EA	$5,843	2015	40		2055
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	3	EA	$3,754	2015	20		2035
LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY	ORIGINAL			30,000	SF	$177,954	1994	20	3	DR
LI10	LIGHTING SYSTEM, INTERIOR - LIBRARY	2015 UPGRADE			35,185	SF	$208,710	2015	20		2035
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				35,185	SF	$80,804	2015	20		2035
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS	0000000841	218A	80	AMP	$4,422	2004	25		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$12,073,468				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		5	EA	$4,732	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		10	EA	$9,464	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		6	EA	$7,122	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		2	EA	$2,374	DR
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS	3	EA	$20,311	DR
C3010	WALL FINISH - APPLIED, STANDARD		35,170	SF	$98,160	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	ORIGINAL	23,530	SF	$280,321	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$773	DR
D2020	BACKFLOW PREVENTER (<=1 INCH)	DOMESTIC	1	EA	$1,006	DR
D4030	FIRE ALARM SYSTEM - DEVICES		65,185	SF	$280,167	DR
D5020	LIGHTING SYSTEM, INTERIOR - LIBRARY	ORIGINAL	30,000	SF	$177,954	DR
				TOTAL DEFERRED RENEWAL COST	$882,384	

No Projected Component Replacement Cost for Asset No. 1080 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS		6	LEAF	$18,677	2019
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS		5	LEAF	$15,565	2019
B2010	WALL, EXTERIOR, PANEL JOINT RESTORATION		4,320	SF	$105,157	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	1	EA	$3,886	2019
D2090	AIR COMPRESSOR - UTILITY (< =5 HP)	QUINCY	1	HP	$2,351	2019
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	MONTGOMERY	1	EA	$265,723	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$411,359**	

No Projected Component Replacement Cost for Asset No. 1080 for 2020

No Projected Component Replacement Cost for Asset No. 1080 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2010 INSTALL	23,530	SF	$315,503	2022
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	1	EA	$2,537	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$318,040**	

No Projected Component Replacement Cost for Asset No. 1080 for 2023

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		30,200	SF	$753,931	2024
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		90	LF	$60,275	2024
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		9,500	SF	$26,127	2024
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED		3,460	SF	$62,955	2024
D3040	PUMP - ELECTRIC (<=10 HP)	CWP-1	7	HP	$15,138	2024
D3040	PUMP - ELECTRIC (<=10 HP)	CWP-2	7	HP	$15,138	2024
D3040	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	50	GAL	$2,010	2024
D3040	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	50	GAL	$2,010	2024
D2020	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-1	82	GAL	$15,635	2024
D2020	EXPANSION TANK, STL PT (50-450 GAL)	JOHN WOOD	50	GAL	$2,010	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$955,230	

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LIBRARY		65,185	SF	$41,330	2025
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LIBRARY		65,185	SF	$79,111	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$120,441	

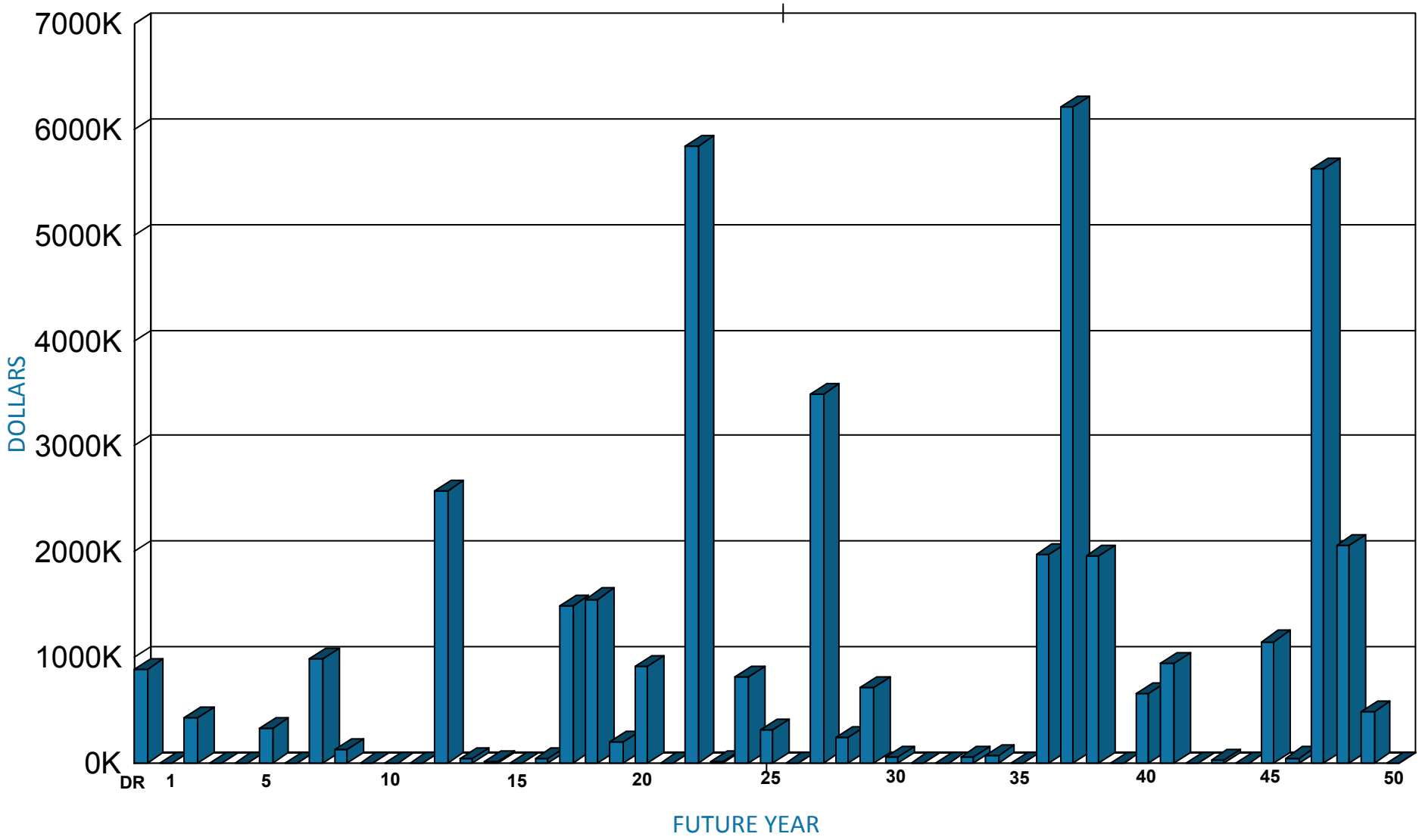
COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1080 for 2026

No Projected Component Replacement Cost for Asset No. 1080 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $5.61

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

AC01 AC02 AC03

LIBRARY

BLDG NO. 1080

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/5/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF
FS02

AC02 AC03 FS01

N

LIBRARY

BLDG NO. 1080

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/5/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1080001a 8/20/2018

Elevator control panel with noncompliant door at the emergency phone

Elevator

1080001e 8/20/2018

Condensing unit

Roof

1080002a 8/20/2018

Skylight over the atrium

Roof

1080002e 8/20/2018

Air handling unit

Roof

1080003a 8/20/2018

Roof drain and overflow drain

Roof

1080003e 8/20/2018

Chilled water piping

Penthouse

1080004a 8/20/2018

Skylight over the north stacks

Roof

1080004e 8/20/2018

Water heater and VFDs

Penthouse

1080005a 8/20/2018

Atrium upper trusses connected to the Performing Arts Center

Roof

1080005e 8/20/2018

Pump equipment

Penthouse

1080006a 8/20/2018

Typical roof condition

Roof

1080006e 8/20/2018

Panelboard

Penthouse

1080007a 8/20/2018
Roof mechanical court with noncompliant door hardware
Roof

1080007e 8/20/2018
Exhaust fan
Penthouse

1080008a 8/20/2018
Atrium clerestory window
Roof

1080008e 8/20/2018
Water heater and pump equipment
Penthouse

1080009a 8/20/2018
Upper mechanical court roof and atrium upper roof
Roof

1080009e 8/20/2018
Backflow preventer
Penthouse

1080010a 8/20/2018
Detail at the metal panel cladding
Roof

1080010e 8/20/2018
Expansion tank
Penthouse

1080011a 8/20/2018
Evidence of water issues at the parapet on the west roof area
Roof

1080011e 8/20/2018
Piping
Penthouse

1080012a 8/20/2018
Atrium upper wall and roof drain downspout
Roof

1080012e 8/20/2018
Air-cooled chiller
Roof

1080013a 8/20/2018
Floor finish and glass walled study room
Room 219

1080013e 8/20/2018
Air-cooled chiller
Roof

1080014a 8/20/2018
Typical glass walled study room
Room 200

1080014e 8/20/2018
Air handling unit
Penthouse

1080015a 8/20/2018
Safety glass in the study room sidelight
Room 200

1080015e 8/20/2018
Variable frequency drives
Penthouse

1080016a 8/20/2018
Perforated wood panel suspended ceiling
Room 200

1080016e 8/20/2018
Air handling unit
Penthouse

1080017a 8/20/2018
Walkway finishes
Second floor

1080017e 8/20/2018
Air handling unit
Penthouse

1080018a 8/20/2018
Accessible drinking fountains without required side protection
Second floor

1080018e 8/20/2018
Duct smoke detector
Penthouse

1080019a 8/20/2018

Utility sink and area finishes

Room 218

1080019e 8/20/2018

Coil section of AHU

Penthouse

1080020a 8/20/2018

Compliant signage

Second floor

1080020e 8/20/2018

Condensing unit

Roof

1080021a 8/20/2018

Lavatories, finishes, and accessories

Room 217

1080021e 8/20/2018

Exterior lighting

Roof

1080022a 8/20/2018

Accessible water closet and accessories

Room 217

1080022e 8/20/2018

Air-cooled chiller

Roof

1080023a 8/20/2018

Atrium stair

Second floor

1080023e 8/20/2018

Compressor

Penthouse

1080024a 8/20/2018

Atrium and skylight

Second floor

1080024e 8/20/2018

Pump equipment

Penthouse

1080025a 8/20/2018

Typical finishes in stacks

Room 200

1080025e 8/20/2018

Unit heater

Penthouse

1080026a 8/20/2018

Office and study area

Second floor

1080026e 8/20/2018

Expansion tank

Penthouse

1080027a 8/20/2018

Upper atrium and clerestory windows

Second floor

1080027e 8/20/2018

Air handling unit

Penthouse

1080028a 8/20/2018

Bridge above the main entrance

Second floor

1080028e 8/20/2018

Drain piping

Penthouse

1080029a 8/20/2018

Office area finishes and balcony access door

Room 202

1080029e 8/20/2018

Exhaust fan

Roof

1080030a 8/20/2018

Balcony finishes

East elevation

1080030e 8/20/2018

Exterior lighting

Roof

1080031a 8/20/2018

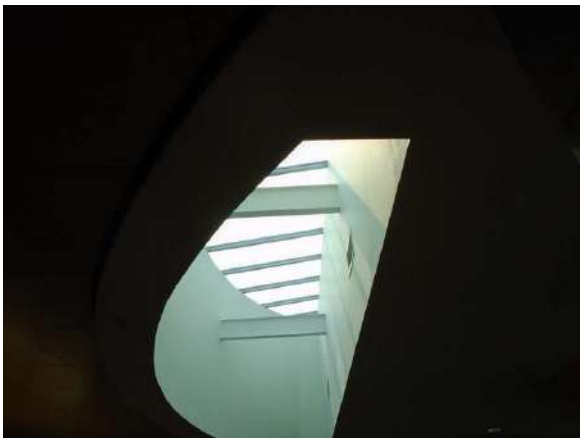
Balcony finishes

East elevation

1080031e 8/20/2018

Interior lighting

Second floor, room 248



1080032a 8/20/2018

Skylight over the north stacks area

Room 200

1080032e 8/20/2018

Sprinkler heads and strobe

Second floor, room 248

1080033a 8/20/2018

Detail at the ceiling near the skylight

Room 200

1080033e 8/20/2018

Fire extinguisher cabinet

Second floor, room 248

1080034a 8/20/2018

Stair and handrail detail

First floor

1080034e 8/20/2018

Evaporator

Second floor, room 245

1080035a 8/20/2018

Workroom and break room casework

Room 105

1080035e 8/20/2018

Thermostat

Second floor, room 245

1080036a 8/20/2018

Casework at the accessible kitchen sink

Room 105

1080036e 8/20/2018

Interior lighting

Second floor, room 248

1080037a 8/20/2018
Typical classroom finishes
Room 112

1080037e 8/20/2018
Smoke detector and interior lighting
Second floor, room 246

1080038a 8/20/2018
Detail at the glazing system
First floor

1080038e 8/20/2018
Fire alarm panels
Second floor, room 218

1080039a 8/20/2018
Main lobby and atrium space
First floor

1080039e 8/20/2018
Panelboard
Second floor, room 218

1080040a 8/20/2018

Accessible drinking fountains without required side protection

First floor

1080040e 8/20/2018

Panelboard

Second floor, room 218

1080041a 8/20/2018

South entrance and stair

First floor

1080041e 8/20/2018

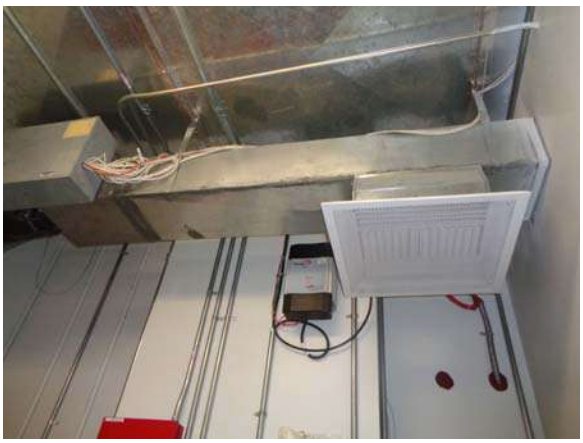
Panelboard

Second floor, room 218

1080042a 8/20/2018

Urinals and area finishes

Room L130



1080042e 8/20/2018

Ductwork

Second floor, room 218

1080043a 8/20/2018
Accessible water closet and accessories
Room L130

1080043e 8/20/2018
Thermostat
Second floor, room 218

1080044a 8/20/2018
Utility sink and area finishes
Room L131

1080044e 8/20/2018
Automatic transfer switch
Second floor, room 218A

1080045a 8/20/2018
Space under the south stair
First floor

1080045e 8/20/2018
Panelboard
Second floor, room 218A

1080046a 8/20/2018
Cane guard at the space under the south stair
First floor

1080046e 8/20/2018
Transformer
Second floor, room 218A

1080047a 8/20/2018
Exit doors with power assist
First floor

1080047e 8/20/2018
Interior lighting
Second floor, room 217A

1080048a 8/20/2018
North entrance and stair
First floor

1080048e 8/20/2018
Strobe
Second floor, room T2-2

1080049a 8/20/2018
Metal ceiling under the second floor catwalk
First floor

1080049e 8/20/2018
Evaporator
Second floor, room 212

1080050a 8/20/2018
Exit doors and hardware
First floor

1080050e 8/20/2018
Car operating panel
Elevator cab

1080051a 8/20/2018
Exterior finishes
North elevation

1080051e 8/20/2018
Pathway lighting
Second floor, patio

1080052a 8/20/2018

Exterior finishes

North elevation

1080052e 8/20/2018

Interior lighting

First floor, room 102

1080053a 8/20/2018

Main entrances and plaza finish

North elevation

1080053e 8/20/2018

Fire extinguisher

First floor, corridor

1080054a 8/20/2018

Exterior finishes and site conditions

West elevation

1080054e 8/20/2018

Interior lighting

First floor, room 114

1080055a 8/20/2018
Exterior finishes and site conditions
West elevation

1080055e 8/20/2018
Interior lighting
First floor, room 124

1080056a 8/20/2018
Exterior finishes and site conditions at the south entrance
South elevation

1080056e 8/20/2018
Elevator machine
First floor, room 123

1080057a 8/20/2018
Exterior finishes and site conditions
Southeast exterior

1080057e 8/20/2018
Elevator controller
First floor, room 123

1080058a 8/20/2018
Exteior finishes and site conditions
East elevation

1080058e 8/20/2018
Switchboard
First floor, room 134

1080059a 8/20/2018
Exteior finishes and site conditions
East elevation

1080059e 8/20/2018
Transformer
First floor, room 134

1080060a 8/20/2018
Metal roof over the first floor at the second floor recesses
West elevation

1080060e 8/20/2018
Panelboards
First floor, room 134

1080061e 8/20/2018
Sprinkler standpipe
First floor, room 132

1080062e 8/20/2018
Interior lighting
First floor, room 135

1080063e 8/20/2018
Interior lighting
First floor, room 138

1080064e 8/20/2018
Annunciator and pull station
First floor, corridor

1080065e 8/20/2018
Exterior lighting
Site

1080066e 8/20/2018
Exterior lighting
Site

1080067e 8/20/2018
Exterior lighting
Site

1080068e 8/20/2018
Exterior lighting
East elevation

1080069e 8/20/2018
Transformer
Site

1080070e 8/20/2018
Switchboard
Site

1080071e 8/20/2018
Strobe and exterior lighting
Building exterior

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	PORTLAND COMMUNITY COLLEGE
Asset Number	1080
Asset Name	LIBRARY
Year Built or Last Energy Renovation	1994

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

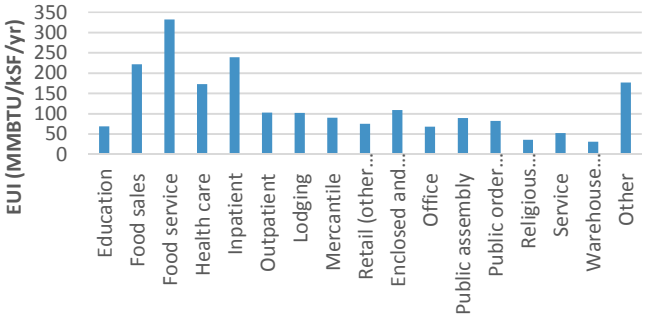
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Library
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

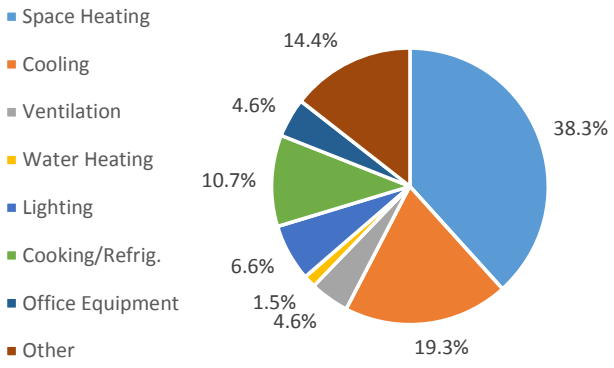


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: LIBRARY	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Library



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Performing Arts Center
Asset 1090

Inspected August 21, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

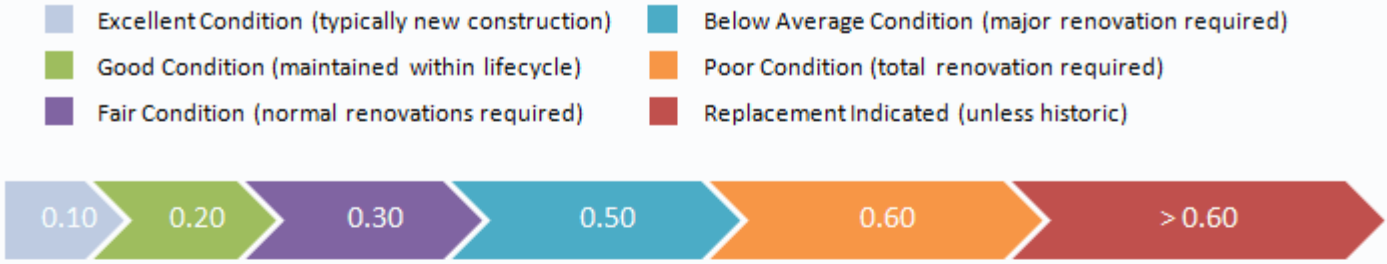
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

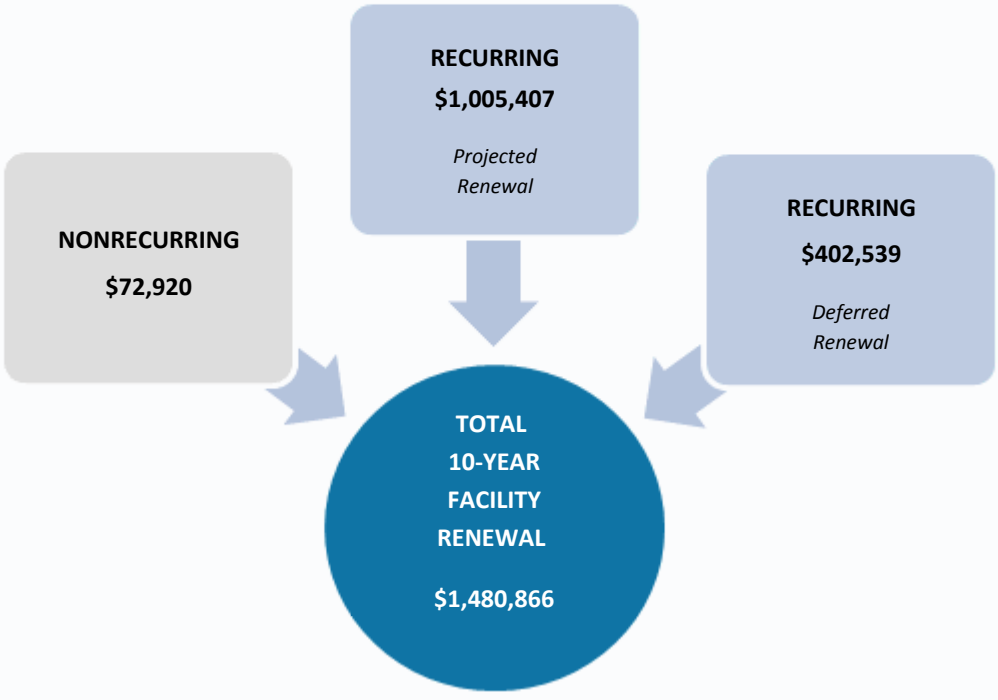
ASSET CODE	1090		
ASSET NAME	PERFORMING ARTS CENTER	**CURRENT REPLACEMENT VALUE**	$8,612,000
ASSET USE	Theater / Auditorium	**FACILITY CONDITION NEEDS INDEX**	0.17
YEAR BUILT	1994	**FACILITY CONDITION INDEX**	0.05
GSF	26,160	**10-YEAR $/SF**	56.61
INSPECTION DATE	08/21/2018		

FCNI Scale

The FCNI for this asset is **0.17**



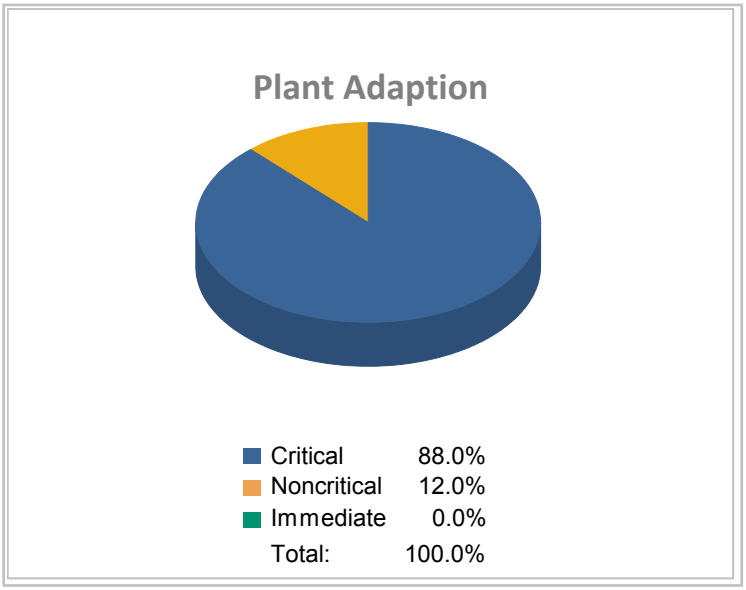
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

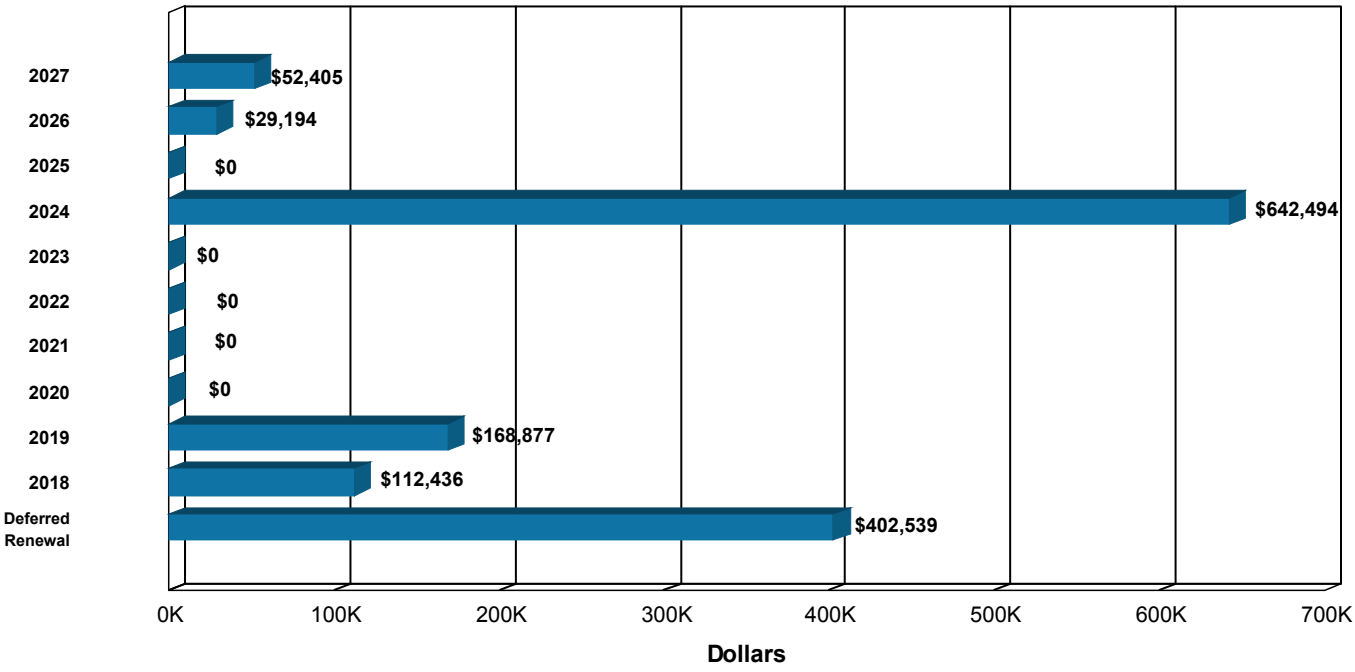
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$64,158**
3 - Noncritical	**$8,762**



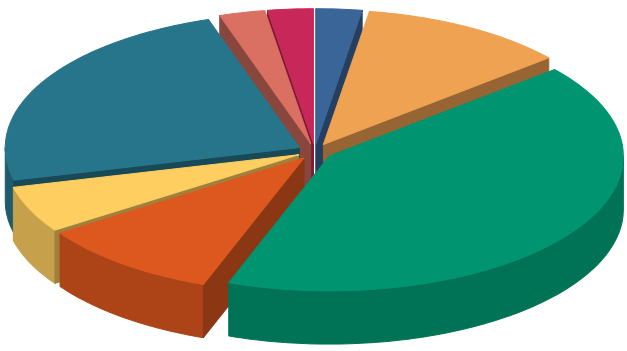
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$38,810	3%
Electrical	$165,363	11%
Exterior	$619,627	42%
Fire/Life Safety	$146,547	10%
Health	$0	0%
HVAC	$82,198	6%
Interiors	$352,233	24%
Plumbing	$40,151	3%
Site	$0	0%
Vert. Trans.	$35,936	2%
TOTAL	**$1,480,866**	

ASSET SUMMARY

The Performing Arts Center (PAC) on the Portland Community College, Sylvania campus is a working stage facility used for live performances presented by the PCC Theatre Arts program. The facility is also available to rent to outside groups. In addition to the auditorium, the lobby is used as an event venue and the classroom is also available to rent for meetings and seminars. The building is located on the east side of the campus and is connected to the Library by an overhead steel truss, which forms part of the Library roof and a portion of the lobby of the PAC. The 26,160 gross square foot building was built in 1994 and has a main floor, a partial second floor, flat roofs, and concrete and corrugated metal exterior walls.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The building is on a sloping site between the Library and Bookstore and faces a concrete and brick paved plaza on its west side. The east side faces an asphalt-paved parking lot and the north side has a small asphalt-paved service drive which provides access to the scene shop. Pedestrian access is from the north and west by concrete sidewalks which are part of the campus system of pedestrian walkways. The landscape consists of trees, shrubs, and ground cover and is in good condition.

Exterior Structure

The roof is a multi-ply asphaltic system which is likely at the end of its normal lifecycle and should be replaced within the next ten years. Exterior walls are cast concrete and corrugated metal siding. The concrete is in good condition, but the joints should be inspected for dried, cracked, or loose sealant and replaced where necessary. The metal siding has reached the end of its normal lifecycle and should be repaired or replaced. The aluminum and glass storefront glazing systems should outlast the scope of this report. The exterior doors include flush, hollow-metal and aluminum and glass storefront units as well as a steel overhead coiling door and oversized aluminum-and-glass horizontally sliding wall sections at the lobby. The overhead and storefront doors are near the end of their normal lifecycles and should be refurbished or replaced. The remaining doors should last another ten or more years.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, ceramic tile, and painted wood. The ceramic tile should last another ten or more years, while the other floor finishes should be replaced or renewed within that timeframe. The interior walls are either painted, wood paneling, or ceramic tile. The painted walls are recommended to be repainted in the next few years. The remaining wall finishes should last beyond the scope of this report. Ceilings are suspended systems of acoustical tile, perforated metal, and wood as

well as painted hard surfaces. All of these ceilings are in good condition and should last another ten or more years.

The interior doors, including the oversized stage doors, are in good condition and will last another ten or more years. The casework in the break rooms, workrooms, and dressing rooms will reach the end of its normal lifecycle in the next few years and is recommended for replacement. The auditorium seating is both fixed folding individual chairs and upholstered bench seating. The seats appear to be in good condition and should outlast the scope of this report.

Accessibility

This building has most required accessible features such as grade-level entrances, accessible door hardware and signage, a wheelchair lift to negotiate the level change in the auditorium, accessible restroom features, and generally compliant stair and ramp railings. However, the ramps in the auditorium lack the required aisle handrails and compliant handrails should be installed. Additionally, the stair to the roof access in room 208 lacks a wall-mounted handrail, which should be added.

The configuration of the single-level drinking fountain is a barrier to accessibility and should be replaced with a dual-level unit and protected by cane guards or alcove walls. Also, the knob hardware at the roof access doors is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

Health

There is an eyewash station in room 109 in the event of a mishap. The unit appears to be well marked and in adequate condition. The eyewash station has remaining service life beyond the next ten years.

Fire/Life Safety

Generally, the exit doors and exit access pathways are properly marked with illuminated exit signs. However, the lobby doors lack the required exit signs and should have compliant signs installed. LED exit signs are recommended for their low maintenance and energy-efficient features. The new exit signs should be connected to an available emergency circuit. Emergency lighting is provided by light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations at this time.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room E2-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and it is believed that the main panel was upgraded in 2016. However, the devices may need to be considered for replacement within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system with a fire pump, controller, and jockey pump serving the system. Additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition. The pumps and controller were recently replaced and have substantial remaining service life.

HVAC

The facility is on the campus hot water loop which is circulated as the heating medium. An expansion tank supports the hot water system. Chilled water is produced by an air-cooled chiller on the roof. The chiller provides 80 tons of cooling and was recently replaced. Pumps installed at different times circulate the heating and chilled water. All of the remaining original pumps and the expansion tank will reach the end of their service life toward the end of the next ten years and should be considered for upgrade on a low priority basis.

An indoor air handling unit provides tempered air. The unit is equipped with chilled and hot water coils and an associated return fan supports the interior supply fan. Distribution equipment consists of metal ductwork that is believed to contain reheat coils. The system is administered by a digital control system that is believed to have been recently upgraded. The HVAC system appears to be an adequate application and has remaining service life. However, a partial control upgrade may need to occur on a low priority basis.

Facility exhaust is provided by rooftop centrifugal fans and a small odor fan. The fans serve restrooms and general exhaust needs. They are nearing lifecycle depletion and should be scheduled for replacement.

Electrical

Power is supplied to the facility at 120/208 volts via a utility-owned transformer on the site. The unit supplies a 1,200 amp main exterior switchboard which in turn energizes a 2,000 amp interior switchboard. The transformer is believed to be new and owned by the local utility. The switchboards are believed to be original and in good condition. The main electrical equipment has remaining service life with no recommendations.

The electrical distribution system consists of panelboards that distribute power at 120/208 volts. Circuits are energized for mechanical, lighting, and general purpose loads. The distribution system appears to be a combination of original equipment and equipment installed in 2004. The system appears in adequate condition and has remaining service life beyond the scope of this report.

The interior lighting consists of surface-mount, lay-in, and suspended fixtures equipped with parabolic, acrylic, or no lenses. The equipment is lamped with T8 fluorescent and LED bulbs. Additionally, there are some recessed can-type fixtures with compact fluorescent bulbs. Occupancy sensors in select fixtures conserve energy. The interior lighting scheme appears to be a combination of original and renovated fixtures. The remaining original interior lighting has reached the end of its service life while the new lighting should outlast the scope of this report.

The exterior lighting consists of wall-mounted HID fixtures with additional lighting provided by pole-mounted fixtures on the site and lighting from adjacent facilities. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, replacement of some of the exterior lighting may need to be considered over the scope of this report.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the air handling unit, return fan, and pumps. The VFDs are new and in excellent condition with no recommendations.

Emergency power is supplied by a Caterpillar diesel-fired generator with a rated capacity of 200 kW and providing power at 480/277 volts. The power is supplied to the facility via a Zenith automatic transfer switch. Additionally, two small stagecraft transfer switches possibly serve the stage lighting. The emergency power equipment is estimated to date to 2004 and, based on age, has remaining service life beyond the scope of this report.

Plumbing

Domestic water is supplied through a copper piping network. A backflow preventer protects the system from cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems, where they could be viewed, appear to be in adequate condition and have remaining service life beyond the scope of this report. The backflow preventer, however, has reached the end of its lifecycle and should be considered for replacement.

Domestic hot water is produced by two commercial-grade electric water heaters installed in 1994. A small pump assists in circulation. The domestic hot water equipment appears to be serviceable but will reach lifecycle depletion within the next ten years.

A utility compressor supports the needs of the stage. The unit is in adequate condition and dates to 1994. Replacement of the compressor should be budgeted within the next ten years due to age.

The plumbing fixtures consists of drinking fountains, water closets, showers, urinals, lavatories, kitchen sinks and utility sinks. The kitchen sinks have reached the end of their expected useful life and should be replaced. All of the other fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The facility contains a wheelchair lift for service to the forum and stage. The Concord unit was installed in 1994 and has a rated car capacity of 750 pounds. The wheelchair lift appears to be well maintained and was operating properly on the day of inspection. However, based on industry standards replacement may need to be planned within the scope of this report.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

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770.674.3141
carlm@isescorp.com

Date of Inspection

August 21, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	30,048	8,762	0	0	0	0	0	0	0	0	0	0	0	$38,810
EXTERIOR	0	0	0	22,426	0	103,957	0	0	0	0	493,244	0	0	0	$619,627
INTERIOR	0	0	0	211,789	0	0	0	0	0	0	111,250	0	29,194	0	$352,233
PLUMBING	0	0	0	2,551	0	11,412	0	0	0	0	26,187	0	0	0	$40,151
HVAC	0	0	0	409	0	17,571	0	0	0	0	11,813	0	0	52,405	$82,198
FIRE/LIFE SAFETY	0	34,110	0	0	112,436	0	0	0	0	0	0	0	0	0	$146,547
ELECTRICAL	0	0	0	165,363	0	0	0	0	0	0	0	0	0	0	$165,363
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	35,936	0	0	0	0	0	0	0	0	$35,936
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$64,158	$8,762	$402,539	$112,436	$168,877	$0	$0	$0	$0	$642,494	$0	$29,194	$52,405	$1,480,866
TOTAL NONRECURRING PROJECT NEEDS			$72,920	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,407,946	

CURRENT REPLACEMENT VALUE	$8,612,000
FACILITY CONDITION NEEDS INDEX	0.17
FACILITY CONDITION INDEX	0.05

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
26,160	$1,480,866	$56.61

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$38,810	$0	$38,810
EXTERIOR	$0	$619,627	$619,627
INTERIOR	$0	$352,233	$352,233
PLUMBING	$0	$40,151	$40,151
HVAC	$0	$82,198	$82,198
FIRE/LIFE SAFETY	$34,110	$112,436	$146,547
ELECTRICAL	$0	$165,363	$165,363
SITE	$0	$0	$0
VERT. TRANS	$0	$35,936	$35,936
HEALTH	$0	$0	$0
TOTALS	**$72,920**	**$1,407,946**	**$1,480,866**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1090FS02	ADD EXIT SIGNAGE		2	Plant Adaption	950
1090FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	33,161
1090AC01	ROOM 208 HANDRAIL UPGRADES	C1010	2	Plant Adaption	2,284
1090AC03	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	23,999
1090AC04	ROOF ACCESS DOORS HARDWARE UPGRADE	C1010	2	Plant Adaption	3,764
1090AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	8,762
				TOTAL	**$72,920**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1090	DR28	DOOR OPERATOR, POWER-ASSIST	ENTRANCES			B2030	Deferred Renewal	6,770
1090	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			109	B2030	Deferred Renewal	946
1090	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			ROOF	B2030	Deferred Renewal	2,839
1090	DR36	DOOR PANIC HARDWARE, EXTERIOR			ENTRANCES	B2030	Deferred Renewal	11,870
1090	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	Deferred Renewal	157,733
1090	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				C3020	Deferred Renewal	41,430
1090	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			STAGE	C3020	Deferred Renewal	12,626
1090	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	1,545
1090	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		M2-01	D2020	Deferred Renewal	1,006
1090	FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		114	D3040	Deferred Renewal	409
1090	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	Deferred Renewal	3,086
1090	LI22	LIGHTING SYSTEM, INTERIOR - THEATER				D5020	Deferred Renewal	162,277
1090	FA01	FIRE ALARM SYSTEM - DEVICES				D4030	2018	112,436
1090	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				B2010	2019	73,735
1090	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			ENTRANCES	B2030	2019	30,222
1090	VT05	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)	CONCORD		C1-02	D1010	2019	35,936
1090	PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	CAMPBELL HAUSFELD	0000000799	109	D2090	2019	11,412

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1090	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000000608	ROOF	D3040	2019	3,773
1090	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000000610	ROOF	D3040	2019	6,899
1090	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	0000000609	ROOF	D3040	2019	6,899
1090	EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				B2010	2024	47,543
1090	DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				B2030	2024	15,003
1090	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				B2030	2024	2,095
1090	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	2024	428,603
1090	DR26	DOOR PANIC HARDWARE, INTERIOR				C1020	2024	3,561
1090	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BRK RM	C1030	2024	17,948
1090	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WORKROOM	C1030	2024	22,435
1090	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			DRSSNG RMS	C1030	2024	67,306
1090	WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-2	0000000613	M2-01	D2020	2024	13,094
1090	WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-3	0000000612	M2-01	D2020	2024	13,094
1090	PH01	PUMP - ELECTRIC (<=10 HP)	HWP-3	0000000621	M2-01	D3040	2024	1,693
1090	PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4	0000000622	M2-01	D3040	2024	1,693
1090	PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009394	M2-01	D3040	2024	1,693

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1090	TK23	EXPANSION TANK, STL PT (50-450 GAL)	BT-1	0000007614	M2-01	D3040	2024	6,735
1090	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	29,194
1090	BA45	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - THEATER				D3060	2027	35,066
1090	BA68	HVAC CONTROLS - MAJOR INSTRUMENTATION - THEATER				D3060	2027	17,339
							TOTAL	$1,407,946

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	1090FS02	ADD EXIT SIGNAGE	2	$950
2	1090FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$33,161
3	1090AC01	ROOM 208 HANDRAIL UPGRADES	2	$2,284
4	1090AC03	AUDITORIUM ACCESSIBILITY UPGRADES	2	$23,999
5	1090AC04	ROOF ACCESS DOORS HARDWARE UPGRADE	2	$3,764
6	1090AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$8,762
		TOTAL FOR PLANT ADAPTION		**$72,920**
		GRAND TOTAL:		**$72,920**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	1090AC01	2	Plant Adaption	ROOM 208 HANDRAIL UPGRADES	$2,284
4	1090AC03	2	Plant Adaption	AUDITORIUM ACCESSIBILITY UPGRADES	$23,999
5	1090AC04	2	Plant Adaption	ROOF ACCESS DOORS HARDWARE UPGRADE	$3,764
6	1090AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$8,762
				TOTAL FOR ACCESSIBILITY	**$38,810**
1	1090FS02	2	Plant Adaption	ADD EXIT SIGNAGE	$950
2	1090FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$33,161
				TOTAL FOR FIRE/LIFE SAFETY	**$34,110**
				GRAND TOTAL:	**$72,920**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD EXIT SIGNAGE

Project Number:	1090FS02	**Category Code:** FS1A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	12/6/2018	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Energy Conservation	Room Only: Floor(s) 1
IBC	1003.2.10		

Description

All exit doors are required to be identified by illuminated exit signs. The lobby doors lack the required exit signs and should have compliant signs installed. LED exit signs are recommended for their low maintenance and energy-efficient features. The new exit signs should be connected to an available emergency circuit.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new LED exit signs, including all connections	EA	2	$118	$236	$222	$444	$680
Base Material/Labor Costs				**$236**		**$444**	
Indexed Material/Labor Costs				**$235**		**$448**	**$682**
Construction Mark Up at 20.0%							**$136**
Original Construction Cost							**$819**
Date of Original Estimate: 12/6/2018						**Inflation**	**$0**
Current Year Construction Cost							**$819**
Professional Fees at 16.0%							**$131**
TOTAL PROJECT COST							**$950**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1090FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/24/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	30	$304	$9,120	$488	$14,640	$23,760
Base Material/Labor Costs				**$9,120**		**$14,640**	
Indexed Material/Labor Costs				**$9,065**		**$14,757**	**$23,822**
Construction Mark Up at 20.0%							**$4,764**
Original Construction Cost							**$28,587**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$28,587**
Professional Fees at 16.0%							**$4,574**
TOTAL PROJECT COST							**$33,161**

All costs shown as Present Value

ROOM 208 HANDRAIL UPGRADES

Project Number:	1090AC01
Priority Sequence:	3
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	10/24/2018

Category Code: AC3B

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Floor-wide: Floor(s) 2

Description

Current legislation relating to stairs requires that handrails be provided on both sides of a stairway. The stair to the roof access in room 208 lacks a wall-mounted handrail, which should be added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	15	$64.33	$965	$45.09	$676	$1,641
Base Material/Labor Costs				**$965**		**$676**	
Indexed Material/Labor Costs				**$959**		**$682**	**$1,641**
Construction Mark Up at 20.0%							**$328**
Original Construction Cost							**$1,969**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,969**
Professional Fees at 16.0%							**$315**
TOTAL PROJECT COST							**$2,284**

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	1090AC03	**Category Code:** AC3B	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/24/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Undefined: Floor(s) 1

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The ramps in the auditorium lack the required aisle handrails. It is recommended that compliant handrails be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted	LF	56	$116	$6,499	$191	$10,695	$17,194
Base Material/Labor Costs				**$6,499**		**$10,695**	
Indexed Material/Labor Costs				**$6,460**		**$10,781**	**$17,241**
Construction Mark Up at 20.0%							**$3,448**
Original Construction Cost							**$20,689**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$20,689**
Professional Fees at 16.0%							**$3,310**
TOTAL PROJECT COST							**$23,999**

All costs shown as Present Value

ROOF ACCESS DOORS HARDWARE UPGRADE

Project Number:	1090AC04
Priority Sequence:	5
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	10/24/2018

Category Code: AC3C

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, commercial-grade door hardware	EA	5	$387	$1,935	$155	$775	$2,710
			Base Material/Labor Costs	**$1,935**		**$775**	
			Indexed Material/Labor Costs	**$1,923**		**$781**	**$2,704**
						Construction Mark Up at 20.0%	**$541**
						Original Construction Cost	**$3,245**
Date of Original Estimate:	10/24/2018					**Inflation**	**$0**
						Current Year Construction Cost	**$3,245**
						Professional Fees at 16.0%	**$519**
						TOTAL PROJECT COST	**$3,764**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1090AC02	**Category Code:** AC3F	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/24/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountain is a barrier to accessibility and should be replaced with a dual-level unit.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
Base Material/Labor Costs				**$2,481**		**$3,798**	
Indexed Material/Labor Costs				**$2,467**		**$3,828**	**$6,295**
Construction Mark Up at 20.0%							**$1,259**
Original Construction Cost							**$7,553**
Date of Original Estimate: 10/24/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,553**
Professional Fees at 16.0%							**$1,209**
TOTAL PROJECT COST							**$8,762**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW03	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED				3,120	SF	1.12	$47,543	1994	30		2024
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				3,120	SF	1.12	$73,735	1994	25		2019
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				6,240	SF	1.12	$14,372	1994	30	10	2034
WN05	GLASS, STOREFRONT	STANDARD			3,000	SF	1.12	$423,557	1994	40		2034
WN05	GLASS, STOREFRONT	SLIDING WALL AT THE LOBBY			360	SF	1.12	$50,827	1994	40		2034
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS			ENTRANCES	10	LEAF	1.00	$30,222	1994	25		2019
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	KNOB HDW			5	LEAF	1.00	$10,033	1994	40		2034
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			109	1	LEAF	1.00	$2,007	1994	40		2034
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			ROOF	3	LEAF	1.00	$6,020	1994	40		2034
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			EXITS	2	LEAF	1.00	$4,013	1994	40		2034
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				144	SF	1.00	$15,003	1994	30		2024
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			2	EA	1.00	$13,541	2010	20		2030
DR28	DOOR OPERATOR, POWER-ASSIST	ENTRANCES			1	EA	1.00	$6,770	1994	20	3	DR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				1	EA	1.00	$2,095	1994	30		2024
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			109	1	EA	1.00	$946	1994	12	11	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			ROOF	3	EA	1.00	$2,839	1994	12	11	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR			ENTRANCES	10	EA	1.00	$11,870	1994	12	11	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				20,500	SF	1.00	$428,603	1994	30		2024
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			45	LEAF	1.00	$99,515	1994	60		2054
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			15	LEAF	1.00	$55,028	1994	60		2054
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			3	LEAF	1.00	$11,006	1994	60		2054
DR03	DOOR - OVERHEAD, INTERIOR	OVERSIZED DRS		STAGE	144	SF	1.00	$15,003	1994	45		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			45	EA	1.00	$33,880	1994	35		2029
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			15	EA	1.00	$11,293	1994	35		2029
DR26	DOOR PANIC HARDWARE, INTERIOR				3	EA	1.00	$3,561	1994	30		2024
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BRK RM	32	LF	1.00	$17,948	1994	30		2024
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WORKROOM	40	LF	1.00	$22,435	1994	30		2024
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			DRSSNG RMS	120	LF	1.00	$67,306	1994	30		2024
SF01	SEATING, FIXED, FOLDING, STANDARD	UPHOLSTERED		111	250	EA	1.00	$88,155	1994	40		2034
SF01	SEATING, FIXED, FOLDING, STANDARD	BENCH		111	130	EA	1.00	$45,841	1994	40		2034

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IW01	WALL FINISH - APPLIED, STANDARD				10,460	SF	1.00	$29,194	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				700	SF	1.00	$28,351	1994	60		2054
IW08	WALL FINISH - WOOD PANEL, STANDARD				2,790	SF	1.00	$58,177	1994	40		2034
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				13,240	SF	1.00	$157,733	1994	12	11	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				6,020	SF	1.00	$41,430	1994	20	3	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				1,200	SF	1.00	$42,320	1994	40		2034
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			STAGE	3,610	SF	1.00	$12,626	1994	10	13	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	ACOUSTICAL			10,950	SF	1.00	$121,875	1994	45		2039
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	PERF METAL		LOBBY	2,350	SF	1.00	$31,742	1994	45		2039
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	WOOD			2,350	SF	1.00	$31,742	1994	45		2039
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				1,200	SF	1.00	$3,349	2010	24		2034
VT05	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)	CONCORD		C1-02	1	EA	1.00	$35,936	1994	25		2019
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				11	EA	1.00	$14,863	1994	35		2029
FX04	PLUMBING FIXTURE - SINK, KITCHEN				2	EA	1.00	$1,545	1994	20	3	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	1.00	$4,993	1994	50		2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				4	EA	1.00	$4,551	1994	35		2029
FX10	PLUMBING FIXTURE - URINAL				5	EA	1.00	$5,393	1994	35		2029
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				18	EA	1.00	$30,509	1994	35		2029
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			109	1	EA	1.00	$1,080	1994	35		2029
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		M2-01	1	EA	1.00	$1,006	1994	20	3	DR
PS22	SUPPLY PIPING SYSTEM - THEATER				26,160	SF	1.00	$207,089	1994	50		2044
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-2	0000000613	M2-01	82	GAL	1.00	$13,094	1994	30		2024
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-3	0000000612	M2-01	82	GAL	1.00	$13,094	1994	30		2024
PD22	DRAIN PIPING SYSTEM - THEATER				26,160	SF	1.00	$310,560	1994	60		2054
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	CAMPBELL HAUSFELD	0000000799	109	5	HP	1.00	$11,412	1994	25		2019
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	ACU-3	0000005992	ROOF	80	TON	1.00	$100,992	2017	30		2047
AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	AHU-3	0000000624	M2-01	30	HP	1.00	$175,314	1994	35		2029
FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	RAF-1	0000000627	M2-01	7	HP	1.07	$14,212	1994	35		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	0000000608	ROOF	1	EA	1.00	$3,773	1994	25		2019
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000000610	ROOF	1	EA	1.00	$6,899	1994	25		2019

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	0000000609	ROOF	1	EA	1.00	$6,899	1994	25		2019
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN		114	1	HP	0.15	$409	1994	20	3	DR
HV22	HVAC DISTRIBUTION NETWORKS - THEATER				26,160	SF	1.00	$1,260,521	1994	45		2039
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-3	0000000621	M2-01	1	HP	1.00	$1,693	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-4	0000000622	M2-01	1	HP	1.00	$1,693	1994	30		2024
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-5	0000007611	M2-01	5	HP	1.00	$8,463	2017	30		2047
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-6	0000007612	M2-01	5	HP	1.00	$8,463	2017	30		2047
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009394	M2-01	1	HP	1.00	$1,693	1994	30		2024
TK23	EXPANSION TANK, STL PT (50-450 GAL)	BT-1	0000007614	M2-01	200	GAL	1.00	$6,735	1994	30		2024
BA22	HVAC CONTROLS - TERMINAL ASSEMBLIES - THEATER				26,160	SF	1.00	$123,690	2017	20		2037
BA45	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - THEATER				26,160	SF	1.00	$35,066	2017	10		2027
BA68	HVAC CONTROLS - MAJOR INSTRUMENTATION - THEATER				26,160	SF	1.00	$17,339	2017	10		2027
FP09	FIRE PUMP - ELECTRIC, 250 GPM, 2" ID (<=15 HP)	JOCKEY PUMP		EXT VAULT	1	HP	1.00	$2,642	2017	35		2052
FP10	FIRE PUMP - ELECTRIC, 500 GPM, 3" ID (15-65 HP)	FIRE PUMP		EXT VAULT	50	HP	1.00	$40,842	2017	35		2052
FS01	FIRE SPRINKLER SYSTEM - WET				26,160	SF	1.00	$353,909	1994	80		2074

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA01	FIRE ALARM SYSTEM - DEVICES				26,160	SF	1.00	$112,436	2000	18		2018
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		E2-01	1	EA	1.00	$2,254	2016	18		2034
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		E2-01	1	EA	1.00	$2,254	2010	18		2028
SE22	ELECTRICAL DISTRIBUTION NETWORK - THEATER	ORIGINAL			21,160	SF	1.00	$598,079	1994	50		2044
SE22	ELECTRICAL DISTRIBUTION NETWORK - THEATER	2004 UPGRADE			5,000	SF	1.00	$141,323	2004	50		2054
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	2MDS	0000000649	BLDG EXT	1,200	AMP	1.00	$89,981	1994	40		2034
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	MDP	0000000775	E2-01	2,000	AMP	1.00	$168,411	1994	40		2034
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	CWP-5	0000007610	M2-01	5	HP	1.00	$3,633	2017	15		2032
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	CWP-6	0000007609	M2-01	5	HP	1.00	$3,633	2017	15		2032
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	RAF-1	0000006336	M2-01	7	HP	1.07	$4,956	2017	15		2032
VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	AHU-3	0000006335	M2-01	30	HP	1.00	$10,846	2017	17		2034
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			4	EA	1.00	$3,086	1994	20	3	DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			1	EA	1.00	$772	2017	20		2037
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	3	EA	1.00	$5,843	2017	40		2057
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	3	EA	1.00	$3,754	2017	20		2037

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LI22	LIGHTING SYSTEM, INTERIOR - THEATER				13,660	SF	1.00	$162,277	1994	20	3	DR
LI22	LIGHTING SYSTEM, INTERIOR - THEATER				12,500	SF	1.00	$148,496	2017	20		2037
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				10,000	SF	1.00	$22,966	2017	20		2037
GN03	GENERATOR - DIESEL (100-200 KW)	CATERPILLAR	0000000646	SITE	200	KW	1.00	$123,303	2004	25		2029
GN09	SWITCH - AUTO TRANSFER, 208 OR 240 V (<=30 AMP)	STAGECRAFT INDUSTRIES	0000000380	C2-01	25	AMP	1.00	$3,865	2004	25		2029
GN09	SWITCH - AUTO TRANSFER, 208 OR 240 V (<=30 AMP)	STAGECRAFT INDUSTRIES	0000000381	C2-01	25	AMP	1.00	$3,865	2004	25		2029
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	ZENITH GE	0000000774	E2-01	100	AMP	1.00	$5,910	2004	25		2029
							Grand Total:	$6,621,823				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		1	EA	$946	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		3	EA	$2,839	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		10	EA	$11,870	DR
B2030	DOOR OPERATOR, POWER-ASSIST	ENTRANCES	1	EA	$6,770	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		13,240	SF	$157,733	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		6,020	SF	$41,430	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		3,610	SF	$12,626	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		2	EA	$1,545	DR
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$1,006	DR
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ODOR FAN	1	HP	$409	DR
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	4	EA	$3,086	DR
D5020	LIGHTING SYSTEM, INTERIOR - THEATER		13,660	SF	$162,277	DR
				TOTAL DEFERRED RENEWAL COST	$402,539	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES		26,160	SF	$112,436	2018

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2018	PROJECTED COMPONENT REPLACEMENT COST		$112,436	

2019

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS		10	LEAF	$31,129	2019
B2010	WALL, EXTERIOR, PANEL JOINT RESTORATION		3,120	SF	$75,947	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	1	EA	$7,106	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-3	1	EA	$7,106	2019
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-5	1	EA	$3,886	2019
D2090	AIR COMPRESSOR - UTILITY (< =5 HP)	CAMPBELL HAUSFELD	5	HP	$11,755	2019
D1010	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)	CONCORD	1	EA	$37,014	2019
2019	PROJECTED COMPONENT REPLACEMENT COST				$173,943	

No Projected Component Replacement Cost for Asset No. 1090 for 2020

No Projected Component Replacement Cost for Asset No. 1090 for 2021

No Projected Component Replacement Cost for Asset No. 1090 for 2022

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1090 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		20,500	SF	$511,775	2024
C1020	DOOR PANIC HARDWARE, INTERIOR		3	EA	$4,252	2024
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		32	LF	$21,431	2024
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		40	LF	$26,789	2024
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		120	LF	$80,367	2024
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK		144	SF	$17,915	2024
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS		1	EA	$2,501	2024
B2010	WALL, EXTERIOR, SIDING, METAL CORRUGATED, V-BEAM, OR RIBBED		3,120	SF	$56,769	2024
D3040	PUMP - ELECTRIC (<=10 HP)	HWP-3	1	HP	$2,021	2024
D3040	PUMP - ELECTRIC (<=10 HP)	HWP-4	1	HP	$2,021	2024
D3040	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	1	HP	$2,021	2024
D3040	EXPANSION TANK, STL PT (50-450 GAL)	BT-1	200	GAL	$8,042	2024
D2020	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-2	82	GAL	$15,635	2024
D2020	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	HWH-3	82	GAL	$15,635	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$767,172**	

RECURRING COST BY YEAR

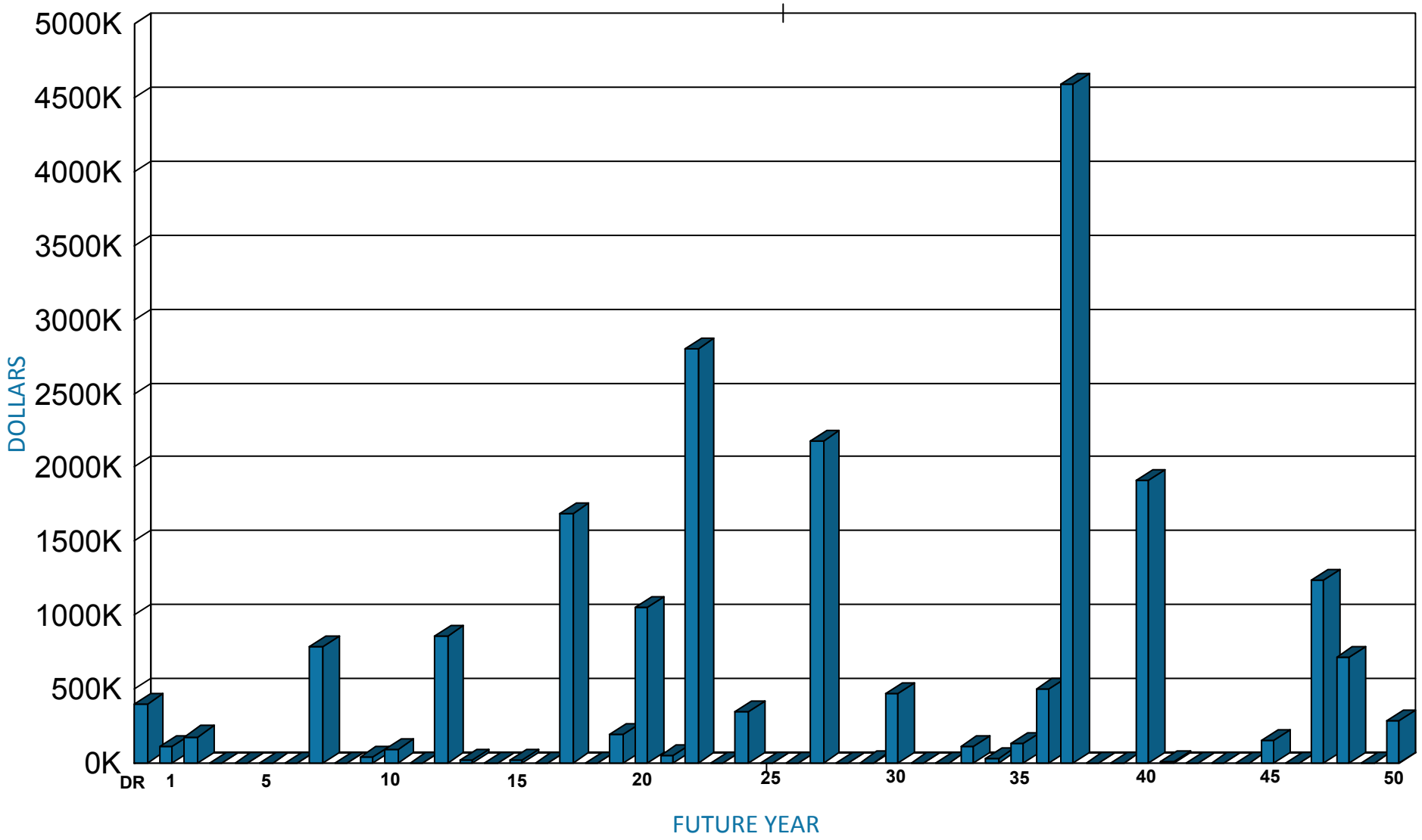
All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1090 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		10,460	SF	$36,982	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$36,982	

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - THEATER		26,160	SF	$22,624	2027
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - THEATER		26,160	SF	$45,753	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$68,377	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



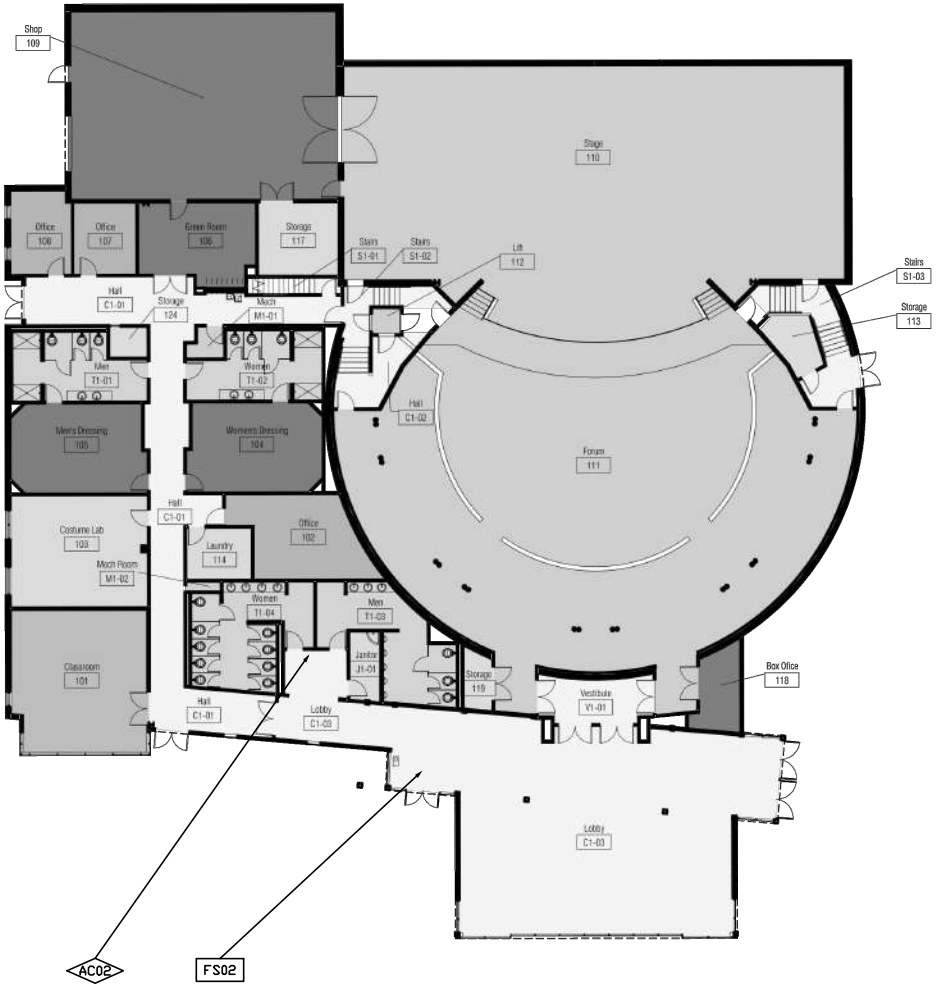
Average Annual Renewal Cost per SF $7.19

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



AC03

AC04

PERFORMING ARTS CENTER

BLDG NO. 1090

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/14/2018

Drawn by: A.W.

Project No. 18-064

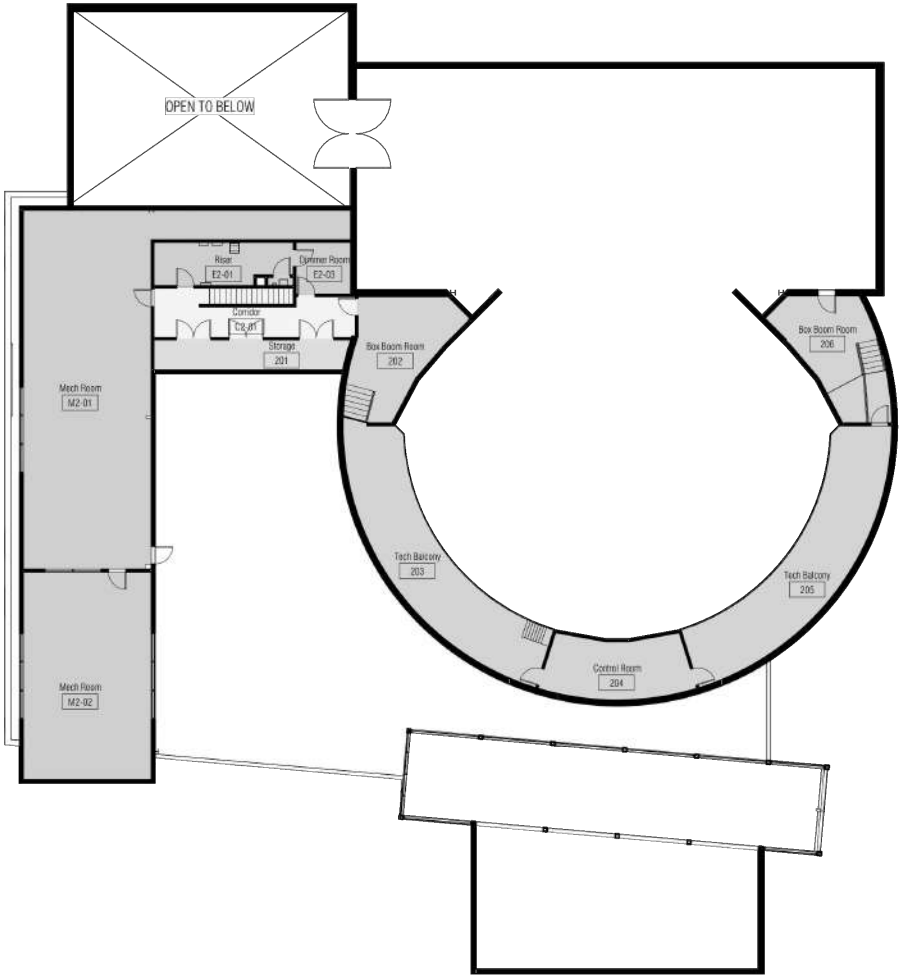
FIRST FLOOR PLAN

Sheet No.

1 of 2

PORTLAND COMMUNITY COLLEGE

ROOF
FS01



AC01 AC04

PERFORMING ARTS CENTER

BLDG NO. 1090

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/14/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1090001a 8/21/2018

Exterior finishes

South elevation

1090001e 8/21/2018

Generator

Site

1090002a 8/21/2018

Exterior finishes and site conditions

West elevation

1090002e 8/21/2018

Air-cooled chiller

Roof

1090003a 8/21/2018

Spire at the building main entrance

West elevation

1090003e 8/21/2018

Exhaust fan

Roof

1090004a 8/21/2018
Exterior finishes and site conditions
North elevation

1090004e 8/21/2018
Exhaust fan
Roof

1090005a 8/21/2018
Exterior finishes and site conditions
North elevation

1090005e 8/21/2018
Pump equipment
Second floor, room M2-01

1090006a 8/21/2018
Side entrance doors and exterior finishes
North elevation

1090006e 8/21/2018
Backflow preventer
Second floor, room M2-01

1090007a 8/21/2018

Detail at a typical glazing unit

North elevation

1090007e 8/21/2018

Variable frequency drives

Second floor, room M2-01

1090008a 8/21/2018

Overhead door at the scene shop entrance

North elevation

1090008e 8/21/2018

Pump equipment

Second floor, room M2-01

1090009a 8/21/2018

Upper lobby light monitor

Roof

1090009e 8/21/2018

Duct smoke detector

Second floor, room M2-01

1090010a 8/21/2018
Roof edges without fall protection
Roof

1090010e 8/21/2018
Chilled water tank
Second floor, room M2-01

1090011a 8/21/2018
Roof drain and overflow drain
Roof

1090011e 8/21/2018
Water heaters
Second floor, room M2-01

1090012a 8/21/2018
Roof membrane and edge without fall protection
Roof

1090012e 8/21/2018
Pump equipment
Second floor, room M2-01

1090013a 8/21/2018
Roof membrane at the lobby superstructure
Roof

1090013e 8/21/2018
Return fan
Second floor, room M2-01

1090014a 8/21/2018
Roof membrane
Roof

1090014e 8/21/2018
Air handling unit
Second floor, room M2-01

1090015a 8/21/2018
Glazing detail at the lobby clerestory windows
Roof

1090015e 8/21/2018
Air handling unit
Second floor, room M2-01

1090016a 8/21/2018
Upper lobby and upper theater space exterior finishes
Roof

1090016e 8/21/2018
HVAC control panel
Second floor, room M2-01

1090017a 8/21/2018
Roof access door with noncompliant door hardware
Room 208

1090017e 8/21/2018
Unit heater
Second floor, room M2-01

1090018a 8/21/2018
Stair without required handrail
Room 208

1090018e 8/21/2018
Fire alarm panel and Safepath panel
Second floor, room E2-01

1090019a 8/21/2018

Theater roof and screen wall

Roof

1090019e 8/21/2018

Switchboard

Second floor, room E2-01

1090020a 8/21/2018

Outer roof access door with noncompliant hardware

Roof

1090020e 8/21/2018

Panelboard

Second floor, room E2-01

1090021a 8/21/2018

Stair with compliant railings

Stair S-3

1090021e 8/21/2018

Automatic transfer switch

Second floor, room E2-01

1090022a 8/21/2018
Nonaccessible drinking fountain
First Floor

1090022e 8/21/2018
Lighting control panels
Second floor, room E2-03

1090023a 8/21/2018
Typical corridor finishes
First Floor

1090023e 8/21/2018
Panelboard
Second floor, room E2-03

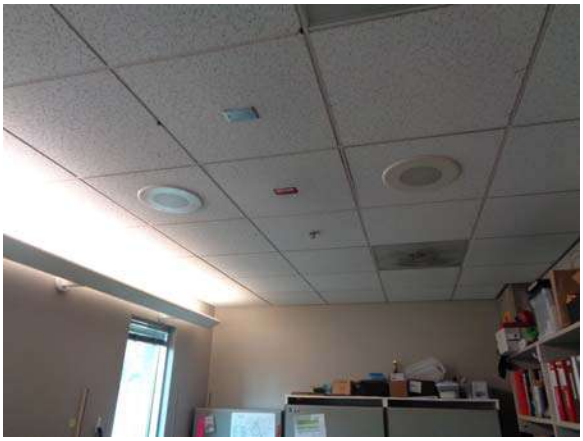
1090024a 8/21/2018
Compliant room signage
Room 106

1090024e 8/21/2018
Pull station
First floor, corridor

1090025a 8/21/2018

Typical fire-rated door and frame

Room 106



1090025e 8/21/2018

Interior lighting

First floor, room 108

1090026a 8/21/2018

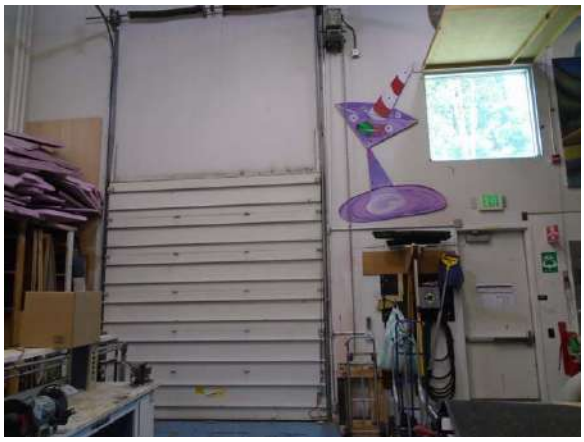
Break area casework and sink

Room 106

1090026e 8/21/2018

Annunciator

First floor, corridor



1090027a 8/21/2018

Overhead door at the scene shop entrance

Room 109

1090027e 8/21/2018

Interior lighting

First floor, room 106

1090028a 8/21/2018

Utility sink in the scene shop

Room 109

1090028e 8/21/2018

Sink

First floor, room 109

1090029a 8/21/2018

Oversized doors to the stage and mezzanine storage

Room 109

1090029e 8/21/2018

Supply and drain piping

First floor, room 109

1090030a 8/21/2018

Stage door with hardware and exit signage

Room 109

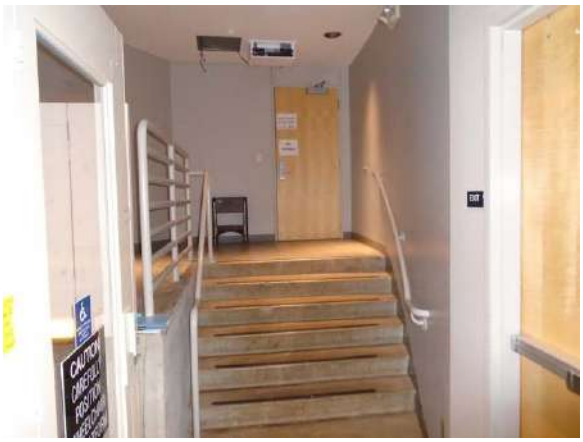
1090030e 8/21/2018

Interior lighting

First floor, room 109

1090031a 8/21/2018
Stage area access to the upper control room level
Stage

1090031e 8/21/2018
Unit heater
First floor, room 109



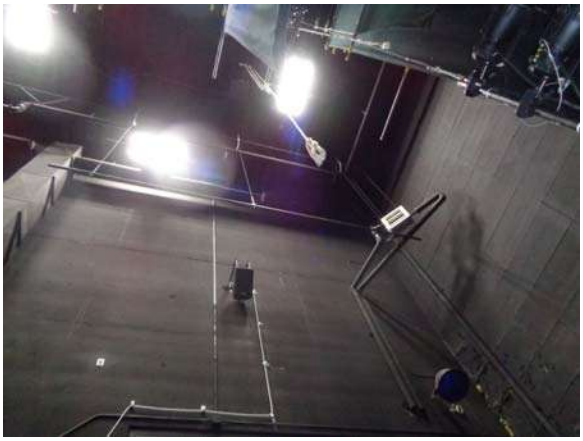
1090032a 8/21/2018
Stairs at the wheelchair lift
Stage area

1090032e 8/21/2018
Interior lighting
First floor, room 109

1090033a 8/21/2018
Auditorium seating and aisle without required handrail
Theater

1090033e 8/21/2018
Air compressor
First floor, room 109

1090034a 8/21/2018
Auditorium seating and interior finishes
Theater



1090034e 8/21/2018
Unit heater
First floor, room 110

1090035a 8/21/2018
Access door to the orchestra pit
Theater

1090035e 8/21/2018
Exit sign
First floor, room 110

1090036a 8/21/2018
Bench seating
Theater

1090036e 8/21/2018
Wheelchair lift
First floor, room 112

1090037a 8/21/2018

Bench seating

Theater

1090037e 8/21/2018

Exit sign

First floor, room 111

1090038a 8/21/2018

Stage area

Theater

1090038e 8/21/2018

Interior lighting

First floor, room 111

1090039a 8/21/2018

Auditorium exit door and hardware

Theater

1090039e 8/21/2018

Emergency light and interior lighting

First floor, room S1-03

1090040a 8/21/2018

Lobby main entrance doors, hardware, and missing exit signs

Lobby

1090040e 8/21/2018

Interior lighting

First floor, room C1-03

1090041a 8/21/2018

Lobby finishes and sliding doors

Lobby

1090041e 8/21/2018

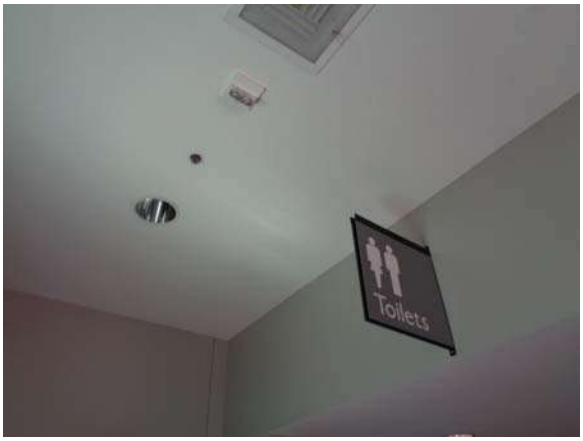
Emergency lights

First floor, room C1-03

1090042a 8/21/2018

Lobby ceiling and clerestory windows

Lobby



1090042e 8/21/2018

Strobe and interior lighting

First floor, room C1-03

1090043a 8/21/2018
Auditorium entrance doors and lobby finishes
Lobby

1090043e 8/21/2018
Sprinkler head
First floor, room T1-03

1090044a 8/21/2018
Ramped corridor with compliant handrails
First Floor

1090044e 8/21/2018
Interior lighting
First floor, room T1-03

1090045a 8/21/2018
Lobby area wood paneling
Lobby

1090045e 8/21/2018
Fire extinguisher
First floor, room C1-03

1090046a 8/21/2018
Lavatories and area finishes
First floor, men's restroom

1090046e 8/21/2018
Interior lighting
First floor, room 101

1090047a 8/21/2018
Urinals and floor and wall finishes
First floor, men's restroom

1090047e 8/21/2018
Interior lighting
First floor, corridor CT-01

1090048a 8/21/2018
Accessible water closet and accessories
First floor, men's restroom

1090048e 8/21/2018
Interior lighting
First floor, corridor 102

1090049a 8/21/2018
Toilet partitions and finishes
First floor, women's restroom

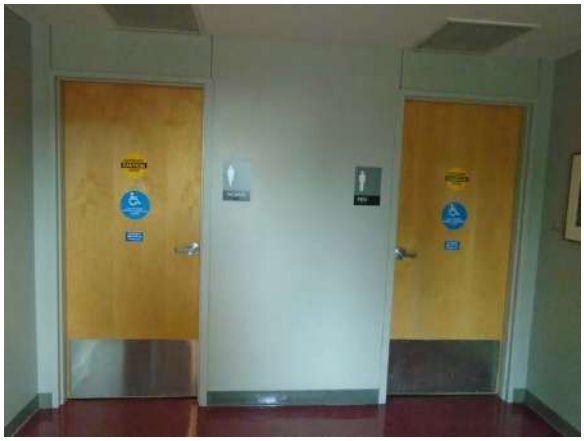
1090049e 8/21/2018
Stand pipe
First floor, room M1-01

1090050a 8/21/2018
Accessible toilet stall, fixture, and accessories
First floor, women's restroom

1090050e 8/21/2018
Exterior lighting
Site

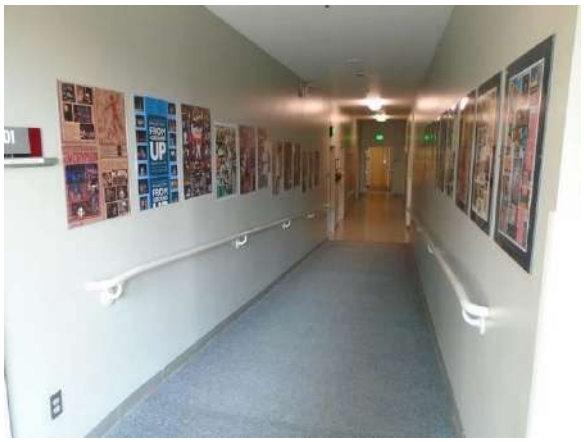
1090051a 8/21/2018
Utility sink
Custodial room

1090051e 8/21/2018
Exterior lighting
South elevation



1090052a 8/21/2018
Restroom entrances with powered door openers
First floor

1090052e 8/21/2018
Exterior lighting
South elevation

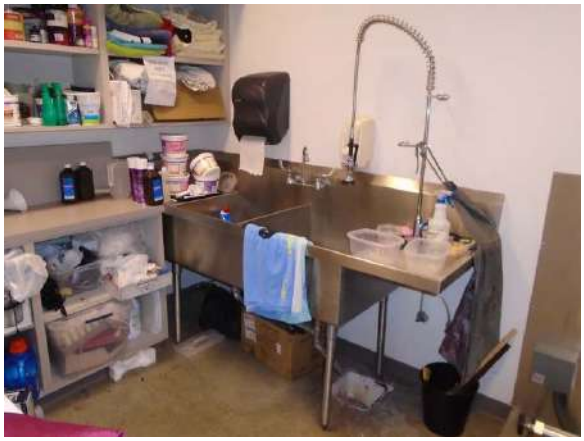


1090053a 8/21/2018
Corridor finishes and compliant handrails
First floor

1090053e 8/21/2018
Exterior lighting
Building exterior

1090054a 8/21/2018
Meeting room finish
Room 101

1090054e 8/21/2018
Switchboards
Site



1090055a 8/21/2018

Utility sink and finishes

Room 102

1090055e 8/21/2018

Generator

Site

1090056a 8/21/2018

Dressing room casework and finishes

Room 104

1090056e 8/21/2018

Transformers

Site

1090057a 8/21/2018

Lavatories and finishes

Room 105A

1090057e 8/21/2018

Exterior lighting

North elevation

1090058a 8/21/2018
Accessible shower
Room 104A

1090058e 8/21/2018
Exterior lighting
North elevation

1090059a 8/21/2018
Standard water closet and partition
Room 105A

1090059e 8/21/2018
Panelboard
Site

1090060a 8/21/2018
Standard water closet and partition
Room 105A

1090061a 8/21/2018
Accessible shower area
Room 105A

1090062a 8/21/2018

Accessible shower

Room 105A

1090063a 8/21/2018

Workroom casework

Room 103

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	PORTLAND COMMUNITY COLLEGE
Asset Number	1090
Asset Name	Performing Arts Center
Year Built or Last Energy Renovation	1994

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

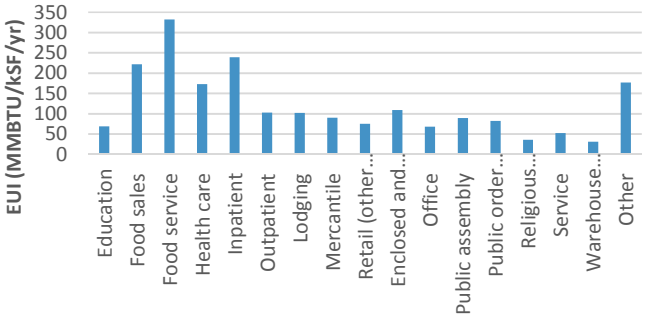
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Theater
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**89.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 62.4
Energy Efficient (consumes 10% to 30% less energy)	62.4 <= EUI <= 80.2
Similar (consumes within 10% less or 10% more energy)	80.2 < EUI < 98
Energy Inefficient (consumes 10% to 30% more energy)	98 <= EUI <= 115.8
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 115.8

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

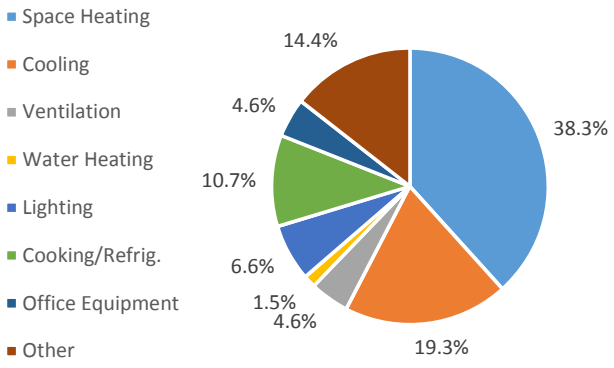


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: THEATER	
Space Heating	38.3%
Cooling	19.3%
Ventilation	4.6%
Water Heating	1.5%
Lighting	6.6%
Cooking/Refrig.	10.7%
Office Equipment	4.6%
Other	14.4%
Total	100.0%

Figure 2. Energy End Use Profile: Theater



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Science Technology
Asset 1120

Inspected August 23, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

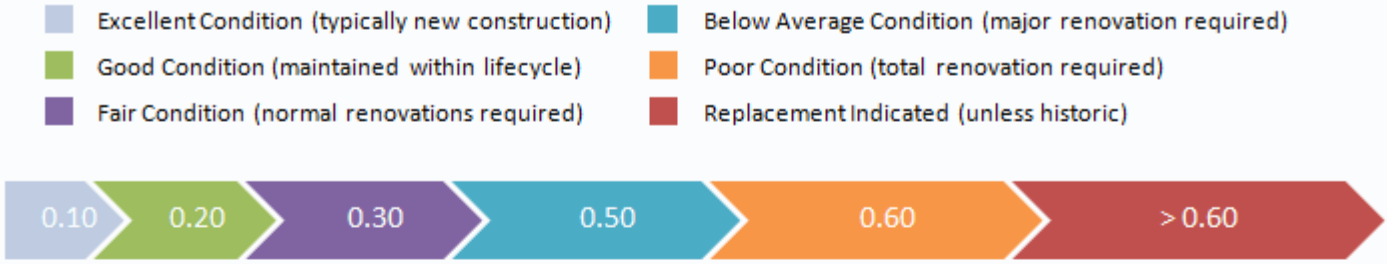
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

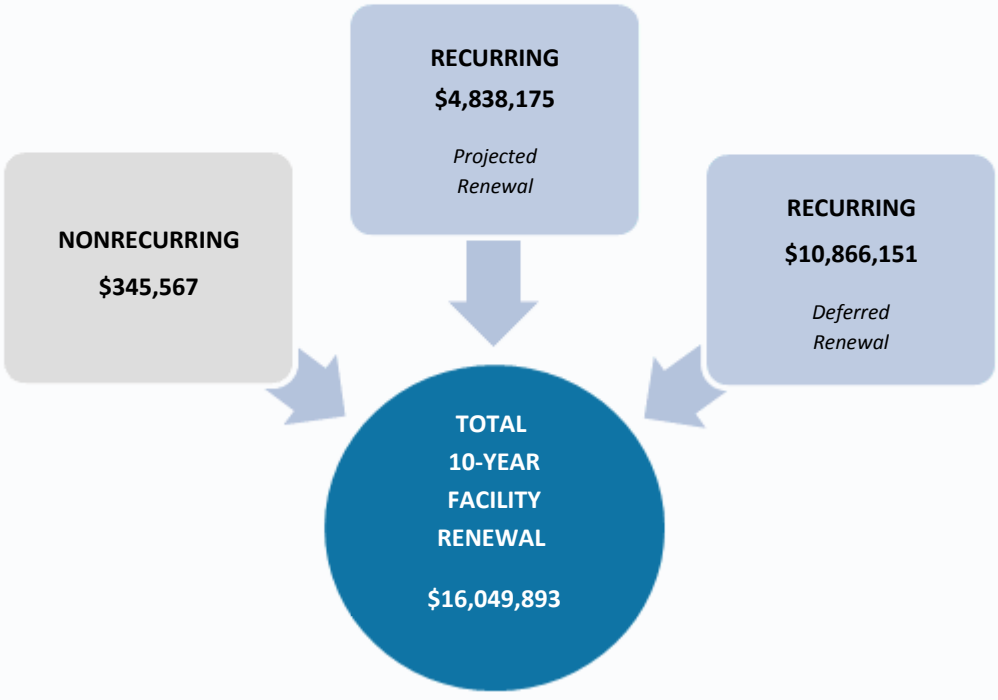
ASSET CODE	1120	**CURRENT REPLACEMENT VALUE**	$38,889,000
ASSET NAME	SCIENCE TECHNOLOGY	**FACILITY CONDITION NEEDS INDEX**	0.41
ASSET USE	Laboratory	**FACILITY CONDITION INDEX**	0.28
YEAR BUILT	1968	**10-YEAR $/SF**	218.90
GSF	73,321		
INSPECTION DATE	08/23/2018		

FCNI Scale

The FCNI for this asset is **0.41**



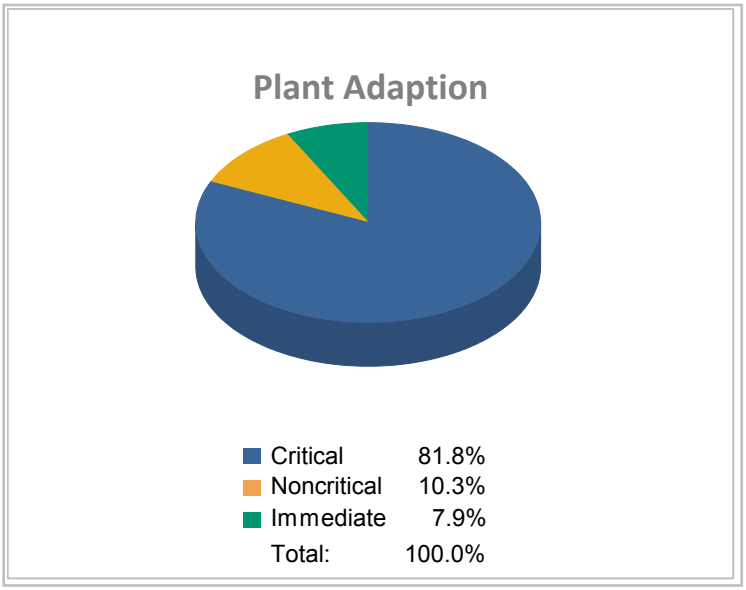
Total Facility Renewal Costs



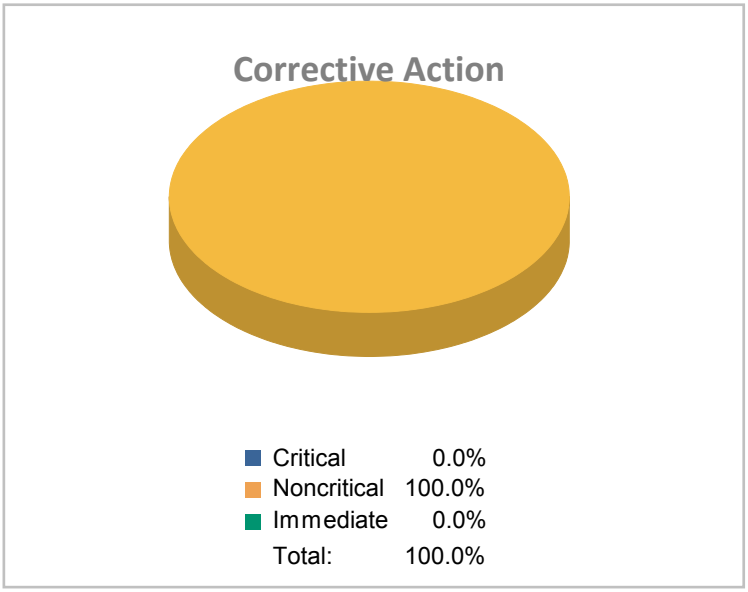
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$26,792**
2 - Critical	**$277,771**
3 - Noncritical	**$35,048**

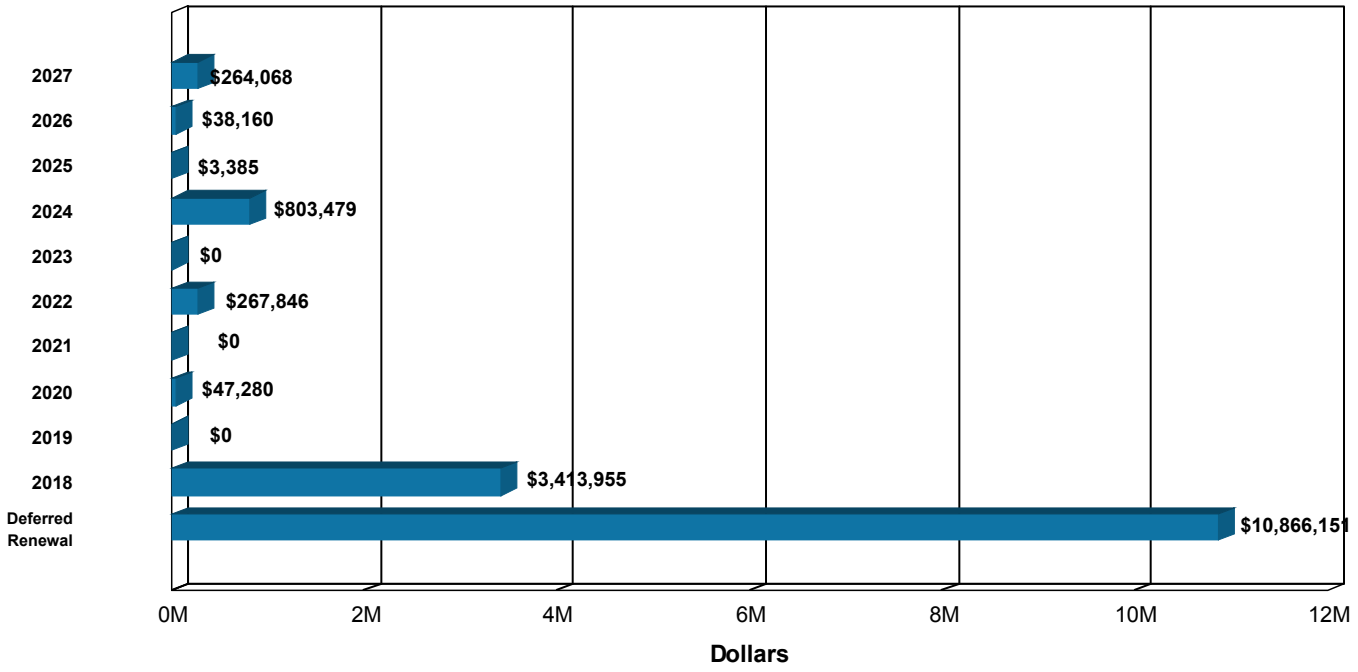


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$5,956**

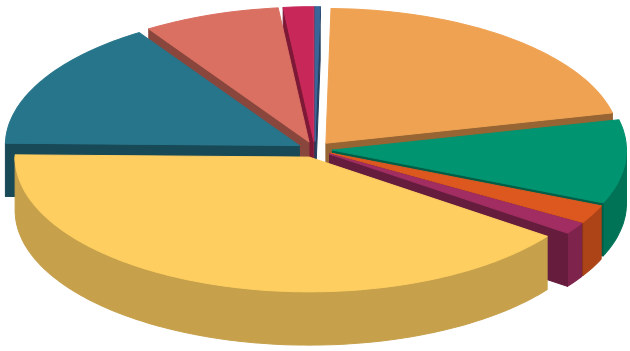


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$61,124	0%
Electrical	$3,359,715	21%
Exterior	$1,604,618	10%
Fire/Life Safety	$363,992	2%
Health	$229,631	1%
HVAC	$6,465,155	40%
Interiors	$2,495,988	16%
Plumbing	$1,193,717	7%
Site	$0	0%
Vert. Trans.	$275,952	2%
TOTAL	**$16,049,893**	

ASSET SUMMARY

The Science Technology Building is a 1968 Brutalist style classroom and lab building on the Portland Community College, Sylvania campus. One of the six early buildings on the campus, it uses the same concrete post-and-beam structures supporting concrete Ts. The exterior walls are brick and steel frames with wood infill and fixed glass windows. On the first level are three, single-room structures referred to as bunkers which are used as additional office space. Two are on the east and one is on the north side of the building. The roof is flat and internally drained. The roofs and intermediate floor structures overhang the exterior walls, creating outdoor covered walkways. The Science Technology building encloses 73,321 gross square feet of floor space and houses classrooms, labs, office, and support facilities for a variety of science courses at the college.

Information for this report was gathered during a site visit conducted on August 23, 2018

Site

The building is located on a sloping site south of the Campus Center and east of the Social Sciences building. Pedestrian access is provided by concrete sidewalks on all sides of the building. Parking is available in shared campus lots, and there is limited service vehicle access. The concrete pedestrian sidewalks are cracked in various areas around this building and should be sealed as part of routine maintenance to prevent further damage to the walkways. The landscaping is in good condition and no site upgrades should be necessary within the report scope.

Exterior Structure

The roof is a concrete paver, ballasted, asphaltic, multi-ply membrane. The membrane was not observable but is believed to be at or beyond its normal lifecycle. The stair and bunker roofs are silver-coated asphaltic membranes which also appear to be near the end of their useful service life. It is recommended that the membranes be replaced in the next few years. The bunkers have skylights which appear to be new and in good condition. The exterior walls are cast-concrete structural elements with infill of brick, wood, and steel-framed glazing. The brick is in good condition and while the wood also appears to be in good condition, it should be refinished within the next ten years. The windows are single-glazed in steel frames. The steel is in good condition but the glass is beyond its normal useful life and should be replaced. The concrete is in very good condition but should be cleaned and any joints cleaned and recaulked where needed. The exterior doors are hollow-metal units, all of which are at or beyond their normal lifecycle and recommended for replacement.

Interior Finishes/Systems

Floor finishes include carpet, vinyl tile, sheet vinyl tile, sealed concrete, and ceramic tile. The newest installations of carpet and ceramic tile should last beyond the next ten years. All of the other floor

finishes should be replaced or renewed within the next ten years. The interior walls are painted, clear finished, or finished with ceramic tile or wood paneling. The ceramic tile and wood paneling are in good condition. The painted surfaces should be repainted and the clear finished wood interior surfaces of the exterior wood wall material should be refinished both in the next ten years.

The ceilings are mostly suspended acoustical tile systems with some areas that are painted. All of the ceiling finishes should last another ten years. Break room and workroom casework also varies in age and condition. While the newer installations should last beyond the next ten years, the older casework should be replaced. The laboratory casework is in average condition for its age and as it is beyond its normal lifecycle, replacement is recommended. All of the interior doors, as well as the fixed seating in the two large lecture halls, are in good condition and no work is recommended.

Accessibility

This building was built before current accessibility legislation but has been upgraded significantly to include accessible features such as grade-level access to the main entrances that have powered door openers. Inside the building there is accessible door hardware and signage, compliant elevator control panels, and accessible restrooms. However, several barriers remain and should be addressed.

Current accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although the exterior stairwells have handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile.

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. Elevation changes at room 312 exceed the limits for a level change and require a ramped transition. It is recommended that a ramp be installed at this location. The steps leading to the control booths in rooms 100 and 108 lack required handrails and these should also be provided. Additionally, the tiered seating in lecture room 107 is missing a center aisle handrail as required by accessibility legislation. Also, the configuration of the single-level drinking fountains is a barrier to accessibility and they should be replaced with dual-level units and protected by alcove walls or cane guards.

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

Health

Emergency eyewash stations and an emergency shower are available in the event of a mishap. The equipment is in good condition with no recommendations.

Asbestos may be present on utility piping. If there is asbestos, it will need to be abated during the next modernization.

Fire/Life Safety

Exit access in this building is adequate and marked with illuminated exit signage. Emergency lighting is provided by light fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations.

The roof has no parapet and it is recommended that hard looped tie-off points be added at intervals around the perimeter the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without restoring fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a Silent Knight modern fire alarm system with the main addressable fire alarm panel in the penthouse. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and the main panel is believed to have been upgraded in 2017. However, the devices may need to be considered for replacement within the scope of this report. A Wheelock mass notification panel is inventoried for information purposes.

The facility has an automatic sprinkler system and additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition.

HVAC

The facility is on the campus hot and chilled water loops for heating and cooling. Pumps circulate the heating and cooling media and an expansion tank serves the heating system. Based on their estimated age, some of the pumps will reach the end of their lifecycle within the next ten years and may need to be considered for replacement.

Two main indoor air handling units (AHUs) and an outdoor AHU provide tempered air. The units contain hot and chilled water coils and the indoor AHUs have a return fan. The outdoor AHU was installed in 2012. Distribution equipment consists of metal ductwork and the systems is controlled by a digital application that are believed to have been upgraded in 2012. Two fan coil units (FCUs) were observed serving the exterior restrooms and are believed to be original. Although the HVAC system appears to be in adequate condition, based on age replacement of all remaining original equipment should be scheduled over the next ten years. Additionally, a partial control upgrade may need to be considered.

The bunkers have rooftop package units to provide heating and cooling. The package units are charged with DX refrigerant for cooling and are believed to have recently been replaced with substantial remaining service life. The facility also incorporates split systems for the IT rooms. These units are also charged with DX refrigerant for cooling. The unitary equipment has substantial remaining service life with no recommendations.

Facility exhaust is provided by utility set type fans, centrifugal inline fans, and a strobic type fan. The fans serve restrooms, fume hoods, and general exhaust needs. They vary in age with several units that are original. All of the original units have reached lifecycle depletion, while the newer equipment should continue to serve the facility. The fume hoods that were observed appear to be well maintained and in good condition.

Electrical

Power is supplied to the facility at 480/277 and 120/208 volts via two exterior switchboards that were installed in 2004. The units are in adequate condition and have substantial remaining service life. Power is then supplied to the penthouse where two original switchboards receive the power for distribution throughout the facility. These units are aged and have reached the end of their service life.

The electrical distribution system consists of panelboards that distribute power at 480/277 or 120/208 volts and two motor control centers (MCCs). Circuits are energized for mechanical, lighting and general purpose loads. The system appears to be original except for some upgrades that took place in 2004. All of the original equipment has reached lifecycle depletion, while the new equipment has substantial remaining service life.

The interior lighting consists of surface-mount, lay-in, and suspended fixtures equipped with parabolic, acrylic, or no lenses. The lighting is lamped with T8 fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be in good condition and is believed to have been installed at various times. Most of the lighting appears to date to 2004 although some may be older. Based on age, the majority of the lighting should be considered for upgrade in the next ten years.

The exterior lighting consists of eave-mounted fixtures with T8 fluorescent bulbs, wall-mounted non-HID fixtures, and a recessed wall-mounted fixture. Additional lighting is provided by the surrounding site and a pole-mounted fixture. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. Some of the fixtures, however, will reach the end of their service life in the next ten years.

Emergency power is provided by a district source. A Zenith automatic transfer switch provides the power for distribution. Installed in 2004, it is in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to the supply fans, exhaust fans, and a pump. The VFDs are in adequate condition and estimated to date to 2012. Based on age, replacement for some of the VFDs should be scheduled within the scope of this report.

Plumbing

Domestic water is supplied through a copper or galvanized piping network. Drain piping is cast-iron with hub-and-spigot connections. The piping systems, where they could be viewed, appeared to be original

and in adequate condition. However, based on age, replacement of the domestic water system should be anticipated within the scope of this report.

Domestic hot water is provided by instantaneous water heaters that serve select rooms. These units are in good condition, but based on a short lifecycle replacement may need to be considered over the next ten years.

The facility has a medical air compressor and a vacuum pump compressor. The equipment appears to be well maintained and was installed in 2012 with remaining service life. A sump pump on the first floor is available in the event of a water mishap. The unit was not in operation and unplugged on the day of inspection. Replacement of the sump pump is recommended.

Plumbing fixtures include water closets, urinals, lavatories, kitchen sinks, and utility sinks. The older kitchen and utility sinks should be replaced while the newer kitchen sink should outlast the scope of this report. The remaining fixtures are in good condition and should serve another ten or more years.

Vertical Transportation

The facility has an exterior hydraulic passenger elevator that serves three floors and has a rated car capacity of 5,000 pounds. Modernized in 2001, it includes a nonproprietary MCE controller. The elevator appears to be in good condition and was operating properly on the day of inspection. However, it will reach the end of its normal lifecycle at the end of the next ten years. Additionally, a stair climber in room 100 was installed in 1995. It has a rated car capacity of 450 pounds and speed of 20 FPM. Based on age, it may need to be considered for replacement within the next five years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 23, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	15,519	10,558	35,048	0	0	0	0	0	0	0	0	0	0	0	$61,124
EXTERIOR	0	0	5,956	1,598,662	0	0	0	0	0	0	0	0	0	0	$1,604,618
INTERIOR	0	0	0	2,434,430	0	0	24,388	0	0	0	0	0	37,170	0	$2,495,988
PLUMBING	0	0	0	773	1,189,974	0	1,980	0	0	0	0	0	990	0	$1,193,717
HVAC	0	0	0	6,192,231	0	0	1,693	0	267,846	0	0	3,385	0	0	$6,465,155
FIRE/LIFE SAFETY	11,274	37,582	0	0	315,136	0	0	0	0	0	0	0	0	0	$363,992
ELECTRICAL	0	0	0	640,055	1,908,845	0	1,251	0	0	0	803,479	0	0	6,085	$3,359,715
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	17,968	0	0	0	0	0	0	257,984	$275,952
HEALTH/EQUIP.	0	229,631	0	0	0	0	0	0	0	0	0	0	0	0	$229,631
SUBTOTAL	$26,792	$277,771	$41,004	$10,866,151	$3,413,955	$0	$47,280	$0	$267,846	$0	$803,479	$3,385	$38,160	$264,068	$16,049,893
TOTAL NONRECURRING PROJECT NEEDS			$345,567	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$15,704,326	

CURRENT REPLACEMENT VALUE	$38,889,000
FACILITY CONDITION NEEDS INDEX	0.41
FACILITY CONDITION INDEX	0.28

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
73,321	$16,049,893	$218.90

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$61,124	$0	$61,124
EXTERIOR	$5,956	$1,598,662	$1,604,618
INTERIOR	$0	$2,495,988	$2,495,988
PLUMBING	$0	$1,193,717	$1,193,717
HVAC	$0	$6,465,155	$6,465,155
FIRE/LIFE SAFETY	$48,856	$315,136	$363,992
ELECTRICAL	$0	$3,359,715	$3,359,715
SITE	$0	$0	$0
VERT. TRANS	$0	$275,952	$275,952
HEALTH	$229,631	$0	$229,631
TOTALS	**$345,567**	**$15,704,326**	**$16,049,893**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1120FS02	FIRE RATING COMPROMISE		1	Plant Adaption	11,274
1120AC04	EXTERIOR STAIR UPGRADES	C2020	1	Plant Adaption	15,519
1120AC05	HANDRAIL INSTALLATION FOR ROOMS 100 & 108		2	Plant Adaption	4,593
1120AC06	DOOR ACCESSIBILITY IMPROVEMENTS		2	Plant Adaption	2,283
1120FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	37,582
1120AC01	RAMP INSTALLATION FOR ELEVATION CHANGE	C1010	2	Plant Adaption	1,398
1120AC03	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,284
1120HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	2	Plant Adaption	229,631
1120ES01	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	5,956
1120AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	35,048
				TOTAL	**$345,567**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1120	EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				B2010	Deferred Renewal	22,847
1120	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	Deferred Renewal	10,282
1120	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				B2020	Deferred Renewal	678,708
1120	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			B2030	Deferred Renewal	44,144
1120	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	78,256
1120	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	KNOB		PENTHOUSE	B2030	Deferred Renewal	4,013
1120	DR28	DOOR OPERATOR, POWER-ASSIST				B2030	Deferred Renewal	27,081
1120	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	36,911
1120	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			PENTHOUSE	B2030	Deferred Renewal	1,893
1120	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	26,115
1120	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	PAVER TOPPED ASPHALTIC			B3010	Deferred Renewal	525,530
1120	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			PNTHSE, STAIR, & RR	B3010	Deferred Renewal	114,657
1120	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			BUNKERS	B3010	Deferred Renewal	28,225
1120	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL			C1030	Deferred Renewal	5,609
1120	CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP				C1030	Deferred Renewal	1,813,313
1120	IW08	WALL FINISH - WOOD PANEL, STANDARD				C3010	Deferred Renewal	113,019

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1120	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2000 INSTALL			C3020	Deferred Renewal	130,213
1120	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				C3020	Deferred Renewal	125,392
1120	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	Deferred Renewal	164,361
1120	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			C3020	Deferred Renewal	82,524
1120	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	773
1120	AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU4	0000001084	J2-1	D3040	Deferred Renewal	8,882
1120	AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU3	0000001306	J2-2	D3040	Deferred Renewal	8,882
1120	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	SF-3	0000000365	PENTHOUSE	D3040	Deferred Renewal	97,601
1120	AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-2	0000000363	PENTHOUSE	D3040	Deferred Renewal	175,314
1120	FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	EF-2	0000000366	PENTHOUSE	D3040	Deferred Renewal	29,431
1120	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000000379	ROOF	D3040	Deferred Renewal	3,773
1120	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000000381	ROOF	D3040	Deferred Renewal	3,773
1120	FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000000382	ROOF	D3040	Deferred Renewal	3,773
1120	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000375	ROOF	D3040	Deferred Renewal	5,466
1120	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	PACE	0000000368	ROOF	D3040	Deferred Renewal	5,466
1120	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-6	0000000355	PENTHOUSE	D3040	Deferred Renewal	5,466

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1120	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000359	PENTHOUSE	D3040	Deferred Renewal	5,466
1120	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000360	PENTHOUSE	D3040	Deferred Renewal	5,466
1120	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-4	0000000364	PENTHOUSE	D3040	Deferred Renewal	5,466
1120	HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL			D3040	Deferred Renewal	5,828,007
1120	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-E	0000000341	PENTHOUSE	D5010	Deferred Renewal	228,652
1120	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-E	0000000340	PENTHOUSE	D5010	Deferred Renewal	228,652
1120	SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDS-4E	0000000352	PENTHOUSE	D5010	Deferred Renewal	33,351
1120	SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDS-2E	0000000348	PENTHOUSE	D5010	Deferred Renewal	89,981
1120	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	Deferred Renewal	509
1120	LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1995 UPGRADE			D5020	Deferred Renewal	58,911
1120	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				D2010	2018	3,329
1120	PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET				D2020	2018	1,185,936
1120	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			M1-5	D2030	2018	710
1120	FA01	FIRE ALARM SYSTEM - DEVICES		14406167	PENTHOUSE	D4030	2018	315,136
1120	SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL			D5010	2018	1,908,845
1120	IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE				C3020	2020	24,388

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1120	VT05	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)	ACCESS INDUSTRIES	0000001024	100	D1010	2020	17,968
1120	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)			312C	D2020	2020	990
1120	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)			T2-04	D2020	2020	990
1120	PH01	PUMP - ELECTRIC (<=10 HP)	B&G	0000000362	PENTHOUSE	D3040	2020	1,693
1120	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	2020	1,251
1120	BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				D3060	2022	178,202
1120	BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				D3060	2022	89,644
1120	LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2004 UPGRADE			D5020	2024	746,066
1120	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2024	57,414
1120	PH01	PUMP - ELECTRIC (<=10 HP)	CP-1	0000001085	J2-1	D3040	2025	1,693
1120	PH01	PUMP - ELECTRIC (<=10 HP)		0000001307	J2-2	D3040	2025	1,693
1120	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			C3020	2026	37,170
1120	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)			312C	D2020	2026	990
1120	VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	0000004401	M1-5	D1010	2027	257,984
1120	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWRP-1	0000005585	ROOF	D5010	2027	1,453
1120	VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	SF-3	0000005584	PENTHOUSE	D5010	2027	4,632

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
						TOTAL	$15,704,326

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
10	1120ES01	EXTERIOR WALL FINISH RENEWAL	3	$5,956
		TOTAL FOR CORRECTIVE ACTION		**$5,956**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1120FS02	FIRE RATING COMPROMISE	1	$11,274
2	1120AC04	EXTERIOR STAIR UPGRADES	1	$15,519
3	1120FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$37,582
4	1120HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	2	$229,631
5	1120AC01	RAMP INSTALLATION FOR ELEVATION CHANGE	2	$1,398
6	1120AC05	HANDRAIL INSTALLATION FOR ROOMS 100 & 108	2	$4,593
7	1120AC06	DOOR ACCESSIBILITY IMPROVEMENTS	2	$2,283
8	1120AC03	AUDITORIUM ACCESSIBILITY UPGRADES	2	$2,284
9	1120AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$35,048
		TOTAL FOR PLANT ADAPTION		**$339,611**
		GRAND TOTAL:		**$345,567**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	1120AC04	1	Plant Adaption	EXTERIOR STAIR UPGRADES	$15,519
5	1120AC01	2	Plant Adaption	RAMP INSTALLATION FOR ELEVATION CHANGE	$1,398
6	1120AC05	2	Plant Adaption	HANDRAIL INSTALLATION FOR ROOMS 100 & 108	$4,593
7	1120AC06	2	Plant Adaption	DOOR ACCESSIBILITY IMPROVEMENTS	$2,283
8	1120AC03	2	Plant Adaption	AUDITORIUM ACCESSIBILITY UPGRADES	$2,284
9	1120AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$35,048
				TOTAL FOR ACCESSIBILITY	**$61,124**
10	1120ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$5,956
				TOTAL FOR EXTERIOR	**$5,956**
1	1120FS02	1	Plant Adaption	FIRE RATING COMPROMISE	$11,274
3	1120FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$37,582
				TOTAL FOR FIRE/LIFE SAFETY	**$48,856**
4	1120HE01	2	Plant Adaption	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	$229,631
				TOTAL FOR HEALTH	**$229,631**
				GRAND TOTAL:	**$345,567**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

FIRE RATING COMPROMISE

Project Number:	1120FS02
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	12/7/2018

Category Code: FS5C

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1,2,3,P

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed without restoring fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	73,321	$0.03	$2,200	$0.08	$5,866	$8,065
Base Material/Labor Costs				**$2,200**		**$5,866**	
Indexed Material/Labor Costs				**$2,186**		**$5,913**	**$8,099**
Construction Mark Up at 20.0%							**$1,620**
Original Construction Cost							**$9,719**
Date of Original Estimate: 12/7/2018						**Inflation**	**$0**
Current Year Construction Cost							**$9,719**
Professional Fees at 16.0%							**$1,555**
TOTAL PROJECT COST							**$11,274**

All costs shown as Present Value

EXTERIOR STAIR UPGRADES

Project Number:	1120AC04	**Category Code:** AC2A	
Priority Sequence:	2		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	8/23/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,3
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although the exterior stairwells have handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	8	$729	$5,836	$663	$5,305	$11,141
Base Material/Labor Costs				**$5,836**		**$5,305**	
Indexed Material/Labor Costs				**$5,801**		**$5,348**	**$11,148**
Construction Mark Up at 20.0%							**$2,230**
Original Construction Cost							**$13,378**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$13,378**
Professional Fees at 16.0%							**$2,140**
TOTAL PROJECT COST							**$15,519**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1120FS01	**Category Code:** FS6A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	8/23/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	34	$304	$10,336	$488	$16,592	$26,928
Base Material/Labor Costs				**$10,336**		**$16,592**	
Indexed Material/Labor Costs				**$10,274**		**$16,725**	**$26,999**
Construction Mark Up at 20.0%							**$5,400**
Original Construction Cost							**$32,398**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$32,398**
Professional Fees at 16.0%							**$5,184**
TOTAL PROJECT COST							**$37,582**

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	1120HE01	**Category Code:** HE6B	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	11/28/2018	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1,2,3,P
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There may be asbestos existent on utility piping. Prior to future renovation of these systems, this asbestos, if present, will have to be properly removed from the utility networks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from utility piping	SF	68,321	$0.33	$22,546	$0.83	$56,706	$79,252
Plumbing system - abate asbestos from supply piping network	SF	73,321	$0.33	$24,196	$0.83	$60,856	$85,052
			Base Material/Labor Costs	**$46,742**		**$117,563**	
			Indexed Material/Labor Costs	**$46,461**		**$118,503**	**$164,965**
					Construction Mark Up at 20.0%		**$32,993**
					Original Construction Cost		**$197,958**
Date of Original Estimate:	11/28/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$197,958**
					Professional Fees at 16.0%		**$31,673**
					TOTAL PROJECT COST		**$229,631**

All costs shown as Present Value

RAMP INSTALLATION FOR ELEVATION CHANGE

Project Number:	1120AC01	**Category Code:** AC3A	
Priority Sequence:	5		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/23/2018	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	405, 505	Not Applicable	Floor-wide: Floor(s) 3

Description

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. Elevation changes at room 312 exceed the limits for a level change and require a ramped transition. It is recommended that a ramp be installed at this location.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Ramped threshold	LOT	1	$250	$250	$750	$750	$1,000
Base Material/Labor Costs				**$250**		**$750**	
Indexed Material/Labor Costs				**$249**		**$756**	**$1,005**
Construction Mark Up at 20.0%							**$201**
Original Construction Cost							**$1,205**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,205**
Professional Fees at 16.0%							**$193**
TOTAL PROJECT COST							**$1,398**

All costs shown as Present Value

HANDRAIL INSTALLATION FOR ROOMS 100 & 108

Project Number:	1120AC05	**Category Code:** AC3B	
Priority Sequence:	6		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/7/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Item Only: Floor(s) 1

Description

Accessibility legislation requires that goods, services, and amenities offered in buildings be generally accessible to all persons.
The steps leading to the control booths in rooms 100 and 108 lack required handrails and these should be provided.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, per elevation change	SYS	2	$970	$1,940	$680	$1,360	$3,300
Base Material/Labor Costs				**$1,940**		**$1,360**	
Indexed Material/Labor Costs				**$1,928**		**$1,371**	**$3,299**
Construction Mark Up at 20.0%							**$660**
Original Construction Cost							**$3,959**
Date of Original Estimate: 12/7/2018						**Inflation**	**$0**
Current Year Construction Cost							**$3,959**
Professional Fees at 16.0%							**$633**
TOTAL PROJECT COST							**$4,593**

All costs shown as Present Value

DOOR ACCESSIBILITY IMPROVEMENTS

Project Number:	1120AC06	**Category Code:** AC3C	
Priority Sequence:	7		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	12/7/2018	**Element:**	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	Not Applicable	Building-wide: Floor(s) 1,2,3,P

Description

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Lever actuated door hardware	EA	5	$262	$1,310	$67.00	$335	$1,645
Base Material/Labor Costs				**$1,310**		**$335**	
Indexed Material/Labor Costs				**$1,302**		**$338**	**$1,640**
Construction Mark Up at 20.0%							**$328**
Original Construction Cost							**$1,968**
Date of Original Estimate: 12/7/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,968**
Professional Fees at 16.0%							**$315**
TOTAL PROJECT COST							**$2,283**

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	1120AC03	**Category Code:** AC3B	
Priority Sequence:	8		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/23/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	505	Not Applicable	Undefined: Floor(s) 1

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The tiered seating in lecture room 107 is missing a center aisle handrail as required by accessibility legislation.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	15	$64.33	$965	$45.09	$676	$1,641
Base Material/Labor Costs				**$965**		**$676**	
Indexed Material/Labor Costs				**$959**		**$682**	**$1,641**
Construction Mark Up at 20.0%							**$328**
Original Construction Cost							**$1,969**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,969**
Professional Fees at 16.0%							**$315**
TOTAL PROJECT COST							**$2,284**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1120AC02	**Category Code:** AC3F	
Priority Sequence:	9		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/23/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 2,3

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountains is a barrier to accessibility. All single-level drinking fountains should be replaced with dual-level units and protected by alcove walls or cane guards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	4	$1,549	$6,197	$476	$1,905	$8,101
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	4	$932	$3,729	$3,321	$13,286	$17,015
			Base Material/Labor Costs	**$9,926**		**$15,190**	
			Indexed Material/Labor Costs	**$9,866**		**$15,312**	**$25,178**
					Construction Mark Up at 20.0%		**$5,036**
					Original Construction Cost		**$30,214**
Date of Original Estimate: 8/23/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$30,214**
					Professional Fees at 16.0%		**$4,834**
					TOTAL PROJECT COST		**$35,048**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	1120ES01
Priority Sequence:	10
Priority Class:	Noncritical
Project Class:	Corrective Action
Date Basis:	8/23/2018

Category Code: ES2B

System:	EXTERIOR
Component:	COLUMNS/BEAMS/WALLS
Element:	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The exterior wall systems include wood plank finishes. The wood appears to be in generally good condition but should be repainted within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	1,860	$0.57	$1,060	$1.72	$3,199	$4,259
			Base Material/Labor Costs	**$1,060**		**$3,199**	
			Indexed Material/Labor Costs	**$1,054**		**$3,225**	**$4,279**
					Construction Mark Up at 20.0%		**$856**
					Original Construction Cost		**$5,134**
Date of Original Estimate: 8/23/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$5,134**
					Professional Fees at 16.0%		**$821**
					TOTAL PROJECT COST		**$5,956**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				1,860	SF	1.00	$22,847	1968	30	19	DR
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				5,000	SF	1.00	$10,282	1968	30	19	DR
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				3,100	SF	1.00	$678,708	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			22	LEAF	1.00	$44,144	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			39	LEAF	1.00	$78,256	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	KNOB		PENTHOUSE	2	LEAF	1.00	$4,013	1968	40	9	DR
DR28	DOOR OPERATOR, POWER-ASSIST				2	EA	1.00	$13,541	2016	20		2036
DR28	DOOR OPERATOR, POWER-ASSIST				4	EA	1.00	$27,081	1968	20	29	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				39	EA	1.00	$36,911	2000	12	5	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			PENTHOUSE	2	EA	1.00	$1,893	1968	12	37	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				22	EA	1.00	$26,115	2000	12	5	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	PAVER TOPPED ASPHALTIC			25,136	SF	1.00	$525,530	1968	30	19	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			PNTHSE, STAIR, & RR	5,484	SF	1.00	$114,657	1968	30	19	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30			BUNKERS	1,350	SF	1.00	$28,225	1968	30	19	DR
RR23	ROOF SKYLIGHT - PLASTIC DOME			BUNKERS	30	SF	1.00	$5,431	2016	20		2036

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	ORIGINAL			76	LEAF	1.00	$168,070	1968	60		2028
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	2016 INSTALL			24	LEAF	1.00	$53,075	2016	60		2076
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2010 UPGRADE			76	EA	1.00	$57,220	2010	35		2045
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	2016 INSTALL			24	EA	1.00	$18,070	2016	35		2051
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL			10	LF	1.00	$5,609	1968	30	19	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	2014 INSTALL		201	60	LF	1.00	$33,653	2014	30		2044
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP				11,730	SF	1.00	$1,813,313	1968	40	9	DR
SF01	SEATING, FIXED, FOLDING, STANDARD				74	EA	1.00	$26,094	2017	40		2057
IW01	WALL FINISH - APPLIED, STANDARD				69,430	SF	1.00	$193,780	2016	12		2028
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	ORIGINAL			3,590	SF	1.00	$145,401	1968	60		2028
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	2014 UPGRADE			400	SF	1.00	$16,201	2014	60		2074
IW08	WALL FINISH - WOOD PANEL, STANDARD				5,420	SF	1.00	$113,019	1968	40	9	DR
IW08	WALL FINISH - WOOD PANEL, STANDARD			101	960	SF	1.00	$20,018	2017	40		2057
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2016 INSTALL			1,560	SF	1.00	$18,585	2016	12		2028
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL			3,120	SF	1.00	$37,170	2014	12		2026

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2000 INSTALL			10,930	SF	1.00	$130,213	2000	12	5	DR
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD				18,220	SF	1.00	$125,392	1968	20	29	DR
IF04	FLOORING - VINYL SHEET, STANDARD				14,580	SF	1.00	$164,361	1968	15	34	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL			2,340	SF	1.00	$82,524	1968	40	9	DR
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	2014 INSTALL			260	SF	1.00	$9,169	2014	40		2054
IF14	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE				1,040	SF	1.00	$24,388	2000	20		2020
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				46,850	SF	1.00	$521,449	2004	45		2049
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				5,210	SF	1.00	$14,541	2004	24		2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	0000004401	M1-5	1	EA	1.00	$257,984	2002	25		2027
VT05	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)	ACCESS INDUSTRIES	0000001024	100	1	EA	0.50	$17,968	1995	25		2020
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				24	EA	1.00	$32,428	1994	35		2029
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	1968	20	29	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	1.00	$773	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	1.00	$3,329	1968	50		2018
FX10	PLUMBING FIXTURE - URINAL				18	EA	1.00	$19,416	1994	35		2029

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				20	EA	1.00	$33,899	1994	35		2029
FX14	PLUMBING FIXTURE - EMERGENCY SHOWER			308	1	EA	1.00	$1,143	2005	50		2055
FX14	PLUMBING FIXTURE - EMERGENCY SHOWER			307	1	EA	1.00	$1,143	2005	50		2055
FX14	PLUMBING FIXTURE - EMERGENCY SHOWER			306	1	EA	1.00	$1,143	2005	50		2055
FX14	PLUMBING FIXTURE - EMERGENCY SHOWER		0000001027	317	1	EA	1.00	$1,143	2013	50		2063
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			308	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			307	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			306	1	EA	1.00	$1,080	2013	35		2048
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			308	1	EA	1.00	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			307	1	EA	1.00	$1,080	2005	35		2040
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			306	1	EA	1.00	$1,080	2005	35		2040
PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET				73,321	SF	1.00	$1,185,936	1968	50		2018
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)			312C	1	EA	1.00	$990	2016	10		2026
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)			312C	1	EA	1.00	$990	2010	10		2020
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)			T2-04	1	EA	1.00	$990	2010	10		2020

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PD09	DRAIN PIPING SYSTEM - LABORATORY, WET				73,321	SF	1.00	$1,777,888	1968	60		2028
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)			M1-5	1	EA	1.00	$710	2002	20	-4	2018
PG01	AIR COMPRESSOR - MEDICAL/LABORATORY PCKG (=10 HP), WITH DRYER	LAC-1	0000005945	PENTHOUSE	5	HP	1.00	$11,974	2012	20		2032
PG06	VACUUM PUMP - ROTARY VANE (>2<=4 HP)	LV-1	0000005946	PENTHOUSE	3	HP	1.00	$16,515	2012	20		2032
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	0000000995	ROOF	5	TON	1.00	$11,449	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004657	BLDG EXT	1	TON	0.45	$1,030	2012	25		2037
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004658	ROOF	2	TON	0.45	$2,061	2012	25		2037
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006830	303A	1	TON	0.45	$1,336	2012	30		2042
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005591	BDF2-01	2	TON	0.45	$2,092	2012	30		2042
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	CARRIER			5	TON	1.00	$7,482	2004	30		2034
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU4	0000001084	J2-1	1	HP	1.00	$8,882	1968	35	14	DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU3	0000001306	J2-2	1	HP	1.00	$8,882	1968	35	14	DR
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	SF-3	0000000365	PENTHOUSE	15	HP	1.00	$97,601	1968	35	14	DR
AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-2	0000000363	PENTHOUSE	30	HP	1.00	$175,314	1968	35	14	DR
AH20	AIR HANDLING UNIT - OUTDOOR PACKAGE (12-17 HP)	SF-1	0000005580	ROOF	15	HP	1.00	$215,795	2012	25		2037

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	EF-2	0000000366	PENTHOUSE	15	HP	1.00	$29,431	1968	35	14	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000000379	ROOF	1	EA	1.00	$3,773	1968	25	24	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000000381	ROOF	1	EA	1.00	$3,773	1968	25	24	DR
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	0000000382	ROOF	1	EA	1.00	$3,773	1968	25	24	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-3	0000000377	ROOF	1	HP	1.00	$5,466	1990	40		2030
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-4	0000000376	ROOF	1	HP	1.00	$5,466	1990	40		2030
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000375	ROOF	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	PACE	0000000368	ROOF	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-6	0000000355	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-5	0000000356	PENTHOUSE	1	HP	1.00	$5,466	1990	40		2030
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000359	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		0000000360	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-4	0000000364	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
FN33	FAN - UTILITY SET, 1/4" SP (1.25-4 HP)	LABCONCO	0000005944	ROOF	3	HP	1.00	$12,110	2017	40		2057
FN40	FAN - MIXED-FLOW, SHORT STACK, EXHAUST (<=30 HP)	EF-1		ROOF	15	HP	1.00	$62,198	2012	40		2052

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HD01	HOOD, FUME	KEWAUNEE	0000005913	312E	4	LF	1.00	$9,761	2016	35		2051
HD01	HOOD, FUME	LABCONCO	0000009109	306	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009110	306	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009111	306	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009112	306	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000005331	308	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000005334	308	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000005943	317	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009113	306	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009114	306	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009115	307	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009116	307	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009117	307	6	LF	1.00	$14,641	2012	35		2047
HD01	HOOD, FUME	LABCONCO	0000009118	307	6	LF	1.00	$14,641	2012	35		2047
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL			68,321	SF	1.00	$5,828,007	1968	45	4	DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	2012 UPGRADE			5,000	SF	1.00	$426,516	2012	45		2057
PH01	PUMP - ELECTRIC (<=10 HP)	B&G	0000000362	PENTHOUSE	1	HP	1.00	$1,693	1990	30		2020
PH01	PUMP - ELECTRIC (<=10 HP)	HWRP-1	0000005586	ROOF	2	HP	1.00	$3,385	2012	30		2042
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000005587	ROOF	1	HP	1.00	$1,693	2012	30		2042
PH01	PUMP - ELECTRIC (<=10 HP)	CP-1	0000001085	J2-1	1	HP	1.00	$1,693	1995	30		2025
PH01	PUMP - ELECTRIC (<=10 HP)		0000001307	J2-2	1	HP	1.00	$1,693	1995	30		2025
TK20	EXPANSION TANK, STL PT (<20 GAL)	ET		ROOF	10	GAL	1.00	$1,008	2012	30		2042
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)		0000001301	ROOF	2	TON	1.25	$10,602	2010	25		2035
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	GOODMAN	0000001308	ROOF	2	TON	1.25	$10,602	2010	25		2035
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	GOODMAN	0000006011	ROOF	2	TON	1.25	$10,602	2015	25		2040
BA09	HVAC CONTROLS - TERMINAL ASSEMBLIES - LABORATORY, WET				73,321	SF	1.00	$625,080	2012	20		2032
BA32	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY				73,321	SF	1.00	$178,202	2012	10		2022
BA55	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY				73,321	SF	1.00	$89,644	2012	10		2022
FS01	FIRE SPRINKLER SYSTEM - WET				73,321	SF	1.00	$991,933	1968	80		2048
FA01	FIRE ALARM SYSTEM - DEVICES		14406167	PENTHOUSE	73,321	SF	1.00	$315,136	2000	18		2018

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	14406167	PENTHOUSE	1	EA	1.00	$13,857	2017	18		2035
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK	14406178	303A	1	EA	1.00	$13,857	2010	18		2028
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-E	0000000341	PENTHOUSE	3	EA	1.00	$228,652	1968	25	24	DR
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-E	0000000340	PENTHOUSE	3	EA	1.00	$228,652	1968	25	24	DR
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL			68,321	SF	1.00	$1,908,845	1968	50		2018
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	2004 UPGRADE			5,000	SF	1.00	$139,697	2004	50		2054
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDS-4E	0000000352	PENTHOUSE	400	AMP	1.00	$33,351	1968	40	9	DR
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	SQ D	0000001302	SITE	400	AMP	1.00	$33,351	2004	40		2044
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDS-2E	0000000348	PENTHOUSE	1,200	AMP	1.00	$89,981	1968	40	9	DR
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	SQ D	0000001303	SITE	1,200	AMP	1.00	$89,981	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWRP-1	0000005585	ROOF	2	HP	1.00	$1,453	2012	15		2027
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	SF-3	0000005584	PENTHOUSE	7	HP	1.00	$4,632	2012	15		2027
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	EF-2	0000005581	PENTHOUSE	15	HP	1.00	$6,433	2012	16		2028
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	SF-1	0000005588	ROOF	15	HP	1.00	$6,433	2012	16		2028
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	EF-1	0000005589	ROOF	15	HP	1.00	$6,433	2012	16		2028

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	SF-2	0000005583	PENTHOUSE	30	HP	1.00	$10,846	2012	17		2029
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			8	EA	1.00	$4,068	2010	20		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			50	EA	1.00	$25,428	2010	20		2030
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			1	EA	1.00	$509	1995	20	2	DR
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	1	EA	1.00	$1,948	2000	40		2040
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	1	EA	1.00	$1,251	2000	20		2020
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1995 UPGRADE			5,000	SF	1.00	$58,911	1995	20	2	DR
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2004 UPGRADE			63,321	SF	1.00	$746,066	2004	20		2024
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2015 UPGRADE			5,000	SF	1.00	$58,911	2015	20		2035
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				25,000	SF	1.00	$57,414	2004	20		2024
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ZENITH	0000005582	PENTHOUSE	100	AMP	1.00	$5,527	2012	25		2037
							Grand Total:	**$21,952,806**				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		5,000	SF	$10,282	DR
B2010	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD		1,860	SF	$22,847	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM		3,100	SF	$678,708	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW	22	LEAF	$44,144	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	39	LEAF	$78,256	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	KNOB	2	LEAF	$4,013	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		39	EA	$36,911	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$1,893	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		22	EA	$26,115	DR
B2030	DOOR OPERATOR, POWER-ASSIST		4	EA	$27,081	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	PAVER TOPPED ASPHALTIC	25,136	SF	$525,530	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		5,484	SF	$114,657	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		1,350	SF	$28,225	DR
C1030	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP		11,730	SF	$1,813,313	DR
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL	10	LF	$5,609	DR
C3010	WALL FINISH - WOOD PANEL, STANDARD		5,420	SF	$113,019	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2000 INSTALL	10,930	SF	$130,213	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		18,220	SF	$125,392	DR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - VINYL SHEET, STANDARD		14,580	SF	$164,361	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	ORIGINAL	2,340	SF	$82,524	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		1	EA	$773	DR
D3040	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-2	30	HP	$175,314	DR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	SF-3	15	HP	$97,601	DR
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU4	1	HP	$8,882	DR
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU3	1	HP	$8,882	DR
D3040	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	ORIGINAL	68,321	SF	$5,828,007	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	EF-2	15	HP	$29,431	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	1	EA	$3,773	DR
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	PACE	1	EA	$3,773	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	PACE	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-6	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)		1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-4	1	HP	$5,466	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	MDS-4E	400	AMP	$33,351	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDS-2E	1,200	AMP	$89,981	DR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-E	3	EA	$228,652	DR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-E	3	EA	$228,652	DR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	1	EA	$509	DR
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1995 UPGRADE	5,000	SF	$58,911	DR
				TOTAL DEFERRED RENEWAL COST	**$10,866,151**	

2018						
UNI-FORMAT	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY		2	EA	$3,329	2018
D5010	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	ORIGINAL	68,321	SF	$1,908,845	2018
D4030	FIRE ALARM SYSTEM - DEVICES		73,321	SF	$315,136	2018
D2020	SUPPLY PIPING SYSTEM - LABORATORY, WET		73,321	SF	$1,185,936	2018
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)		1	EA	$710	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$3,413,955**	

No Projected Component Replacement Cost for Asset No. 1120 for 2019

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, EPOXY / ACRYLIC / POLYURETHANE		1,040	SF	$25,873	2020
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		1	EA	$1,328	2020
D3040	PUMP - ELECTRIC (<=10 HP)	B&G	1	HP	$1,796	2020
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)		1	EA	$1,050	2020
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)		1	EA	$1,050	2020
D1010	WHEELCHAIR LIFT, VERTICAL, AVERAGE (3 FLOORS MAX)	ACCESS INDUSTRIES	1	EA	$19,062	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$50,160**	

No Projected Component Replacement Cost for Asset No. 1120 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - LABORATORY		73,321	SF	$100,896	2022
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - LABORATORY		73,321	SF	$200,567	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$301,463**	

No Projected Component Replacement Cost for Asset No. 1120 for 2023

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	2004 UPGRADE	63,321	SF	$890,841	2024
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		25,000	SF	$68,555	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$959,396	

2025						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	PUMP - ELECTRIC (<=10 HP)	CP-1	1	HP	$2,082	2025
D3040	PUMP - ELECTRIC (<=10 HP)		1	HP	$2,082	2025
	2025	PROJECTED COMPONENT REPLACEMENT COST			$4,163	

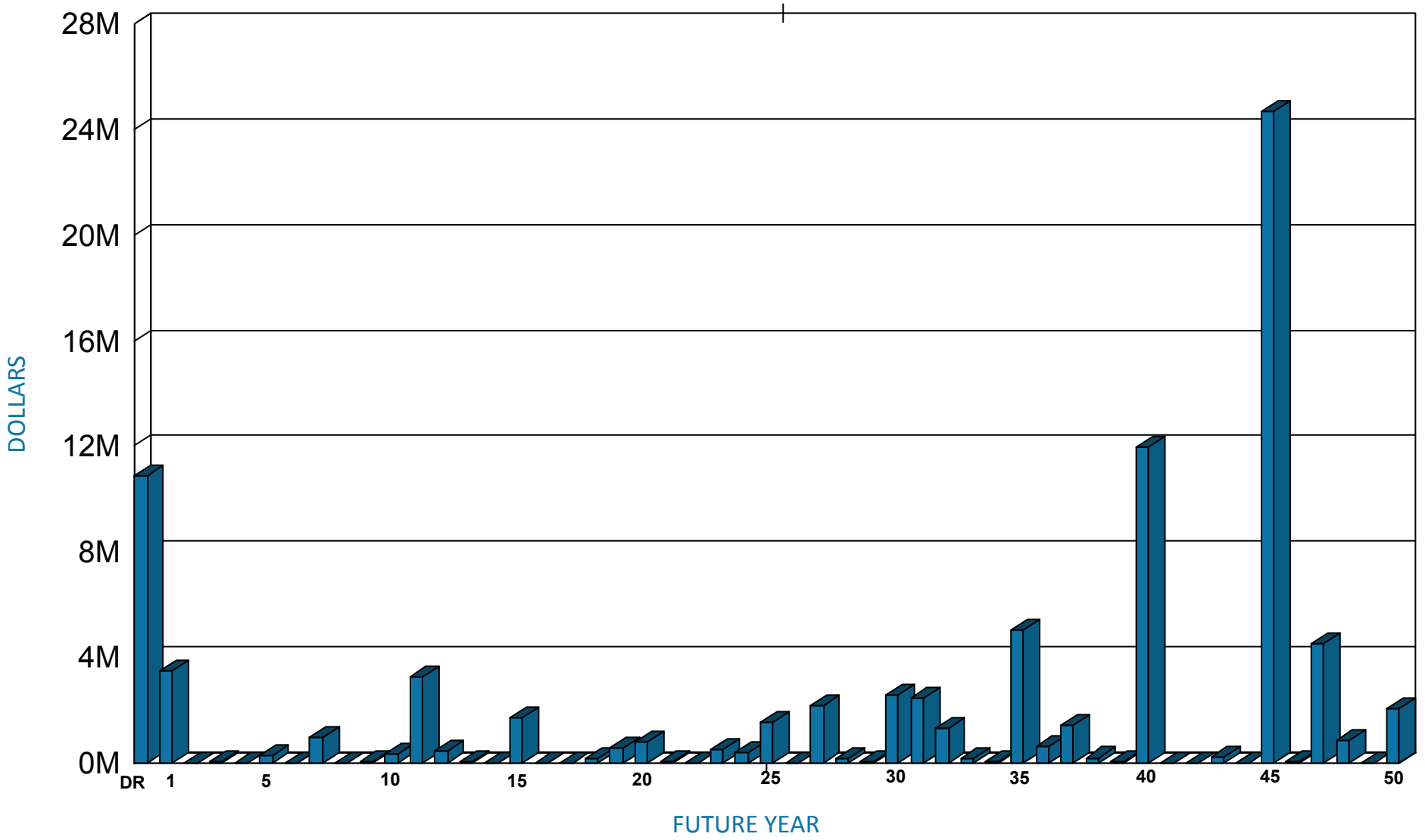
2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014 INSTALL	3,120	SF	$47,085	2026
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)		1	EA	$1,254	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$48,340	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	SF-3	7	HP	$6,043	2027
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWRP-1	2	HP	$1,896	2027
D1010	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV 1	1	EA	$336,610	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$344,549	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



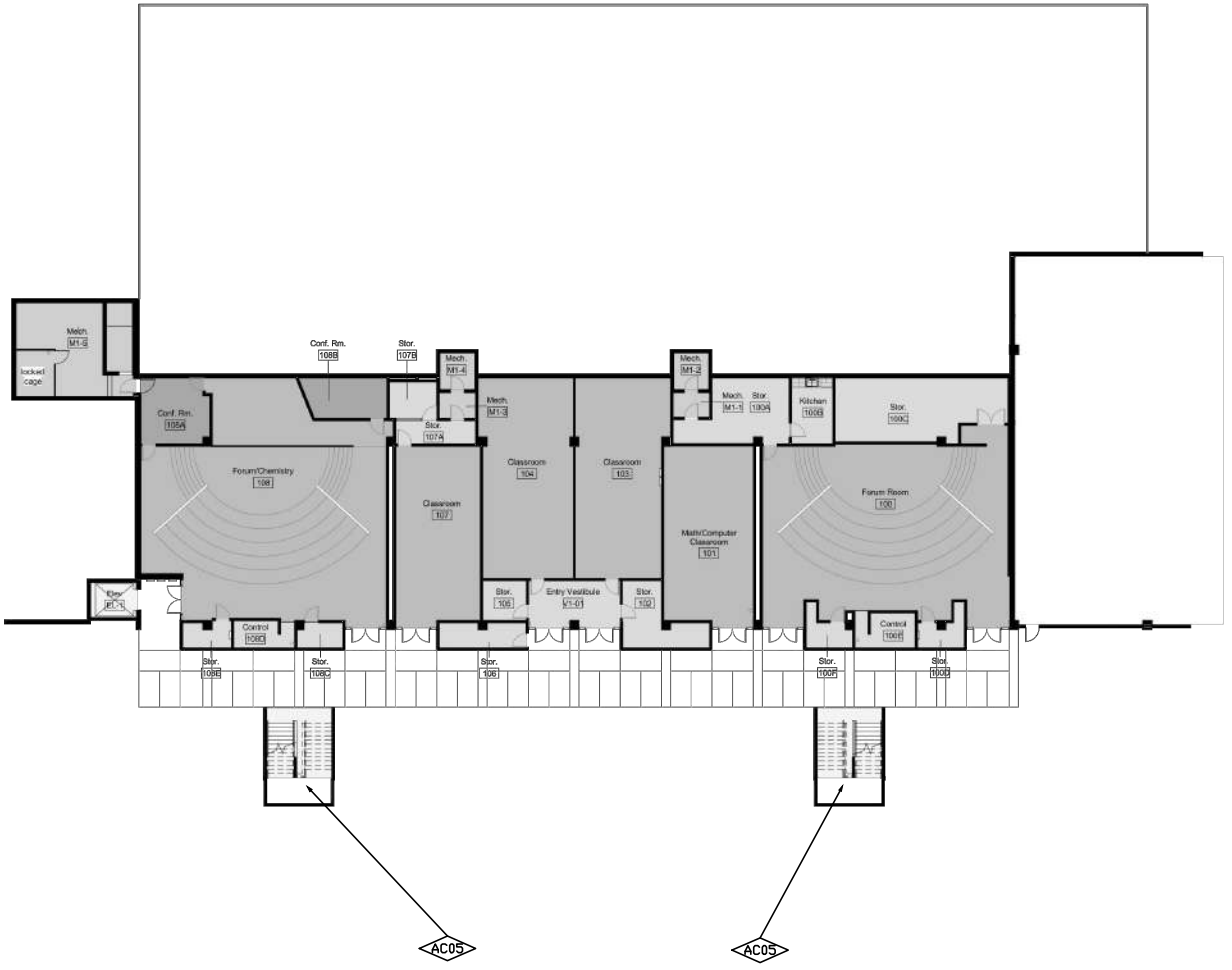
Average Annual Renewal Cost per SF $10.70

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



AC03 AC06 ES01 FS02

AC04 HE01

SCIENCE
TECHNOLOGY

BLDG NO. 1120

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

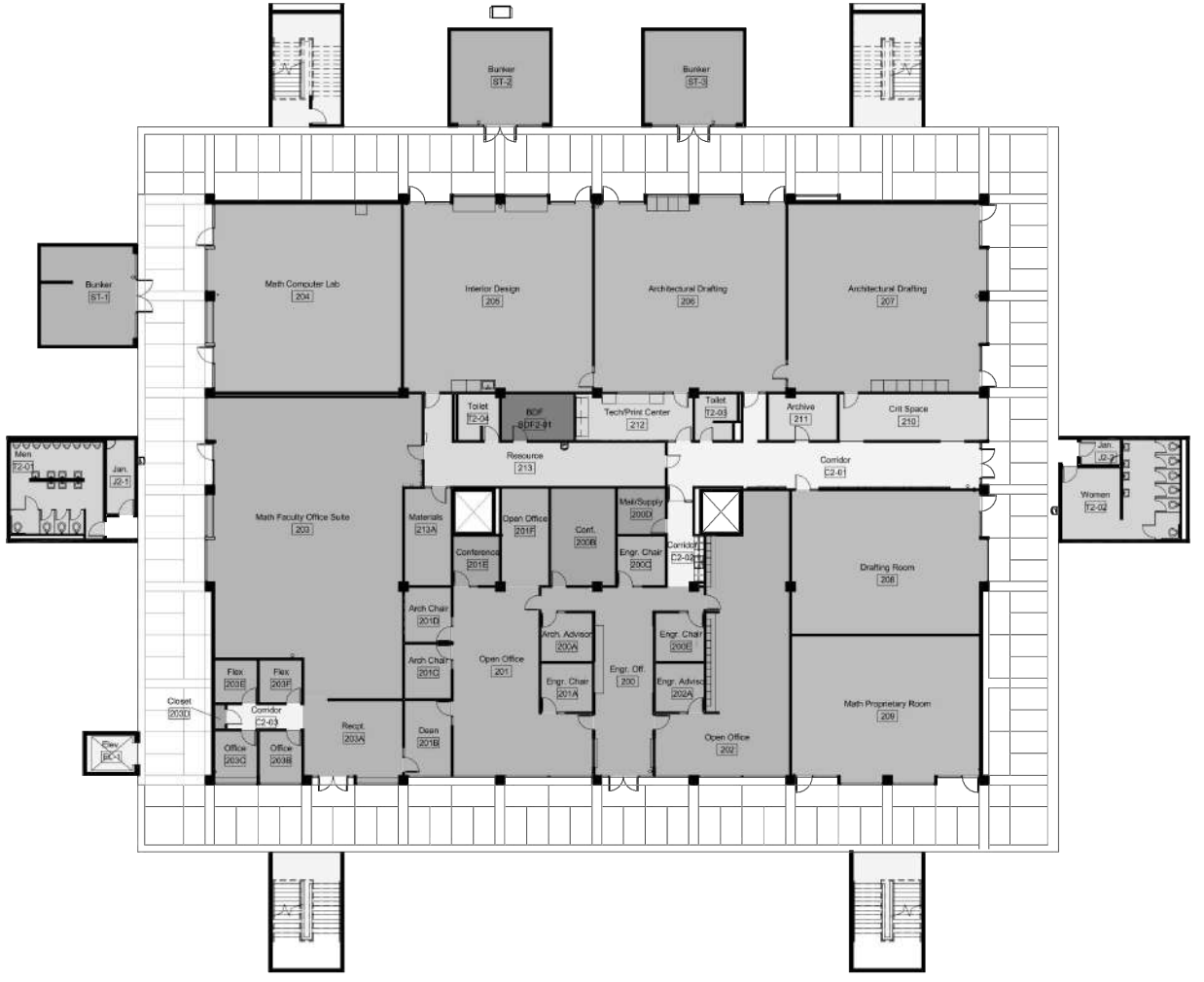
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/10/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE



FS02

AC02 AC04 HE01

SCIENCE TECHNOLOGY

BLDG NO. 1120

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/10/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

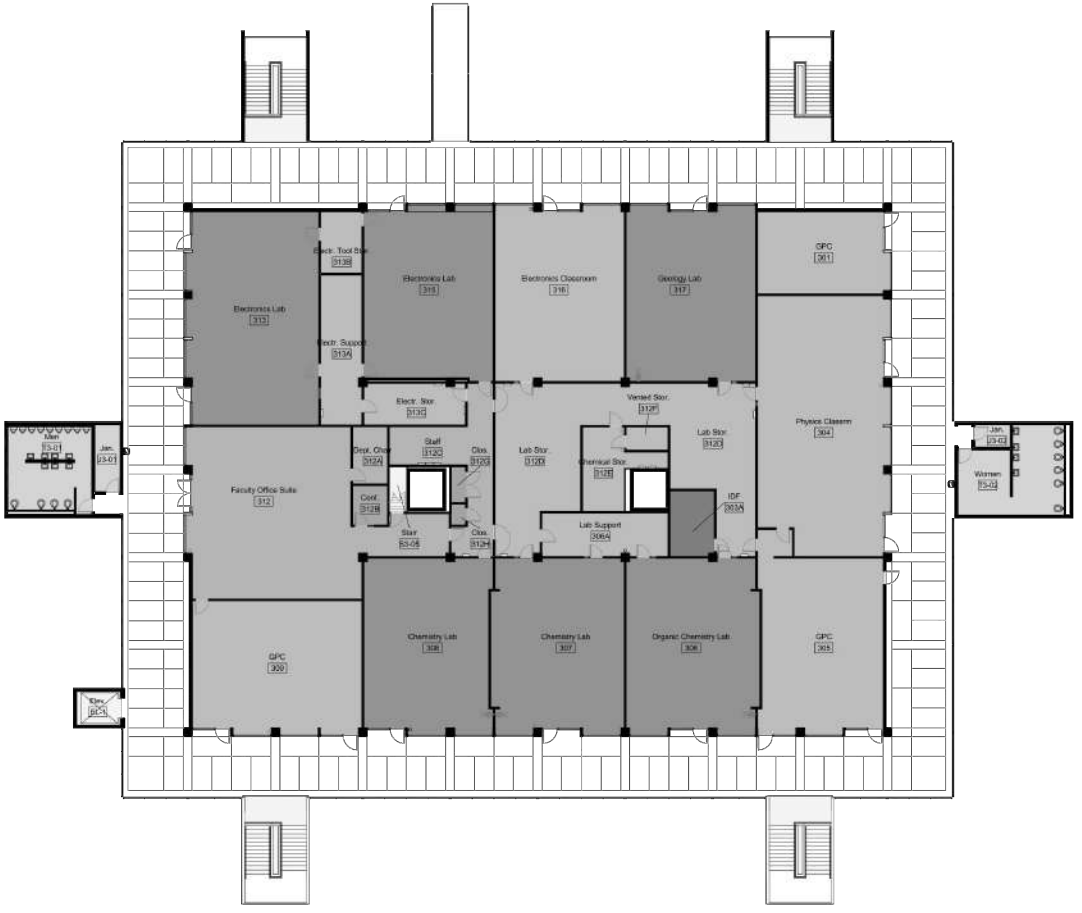
ROOF

FS01

PENTHOUSE FLOOR PLAN

FS02

HE01



FS02

AC01 AC02 AC04 HE01

SCIENCE
TECHNOLOGY

BLDG NO. 1120

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/10/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

1030001a 8/22/2018
Accessible elevator control panel
Elevator

1030001e 8/22/2018
Exhaust fan
Penthouse

1030002a 8/22/2018
Roof membrane and edge without fall protection
Roof

1030002e 8/22/2018
Air-cooled chiller
Roof

1030003a 8/22/2018
Failing coating on the roof membrane
Roof

1030003e 8/22/2018
Condensing unit
Roof

1030004a 8/22/2018
Penthouse and roof-mounted equipment
Roof

1030004e 8/22/2018
Exhaust fan
Penthouse

1030005a 8/22/2018
Stairwell roof
Roof

1030005e 8/22/2018
Pump equipment
Penthouse

1030006a 8/22/2018
Penthouse door with noncompliant hardware
Roof

1030006e 8/22/2018
Variable frequency drive
Penthouse

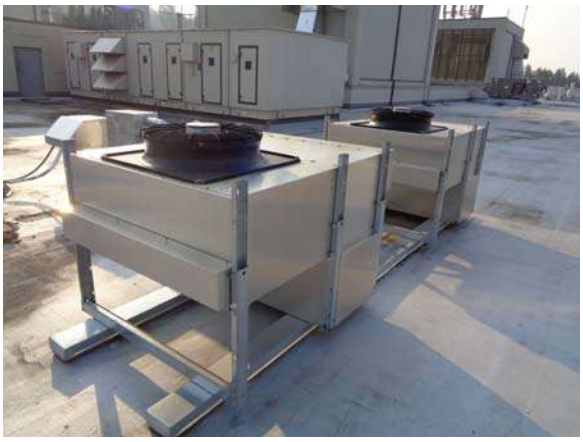
1030007a 8/22/2018
Penthouse door with noncompliant hardware
Roof

1030007e 8/22/2018
HVAC control panel
Penthouse

1030008a 8/22/2018
Roof drain downspout at the penthouse
Roof

1030008e 8/22/2018
Air handling unit
Roof

1030009a 8/22/2018
Light monitor
Roof



1030009e 8/22/2018
Condensing units
Roof

1030010a 8/22/2018

Clerestory windows at suite 247

Roof

1030010e 8/22/2018

Air handling unit

Roof

1030011a 8/22/2018

Skylight

Roof

1030011e 8/22/2018

Exhaust fan

Roof

1030012a 8/22/2018

Roof drain and patched roof membrane

Roof

1030012e 8/22/2018

Refrigeration equipment

Roof

1030013a 8/22/2018
Atrium roof structure
Roof

1030013e 8/22/2018
Exhaust fan
Roof

1030014a 8/22/2018
Gutter at the atrium roof
Roof

1030014e 8/22/2018
Makeup air unit
Roof

1030015a 8/22/2018
Atrium skylight
Roof

1030015e 8/22/2018
Exhaust fan
Roof

1030016a 8/22/2018
Roof membrane and tie-off point
Roof

1030016e 8/22/2018
Makeup air unit
Roof

1030017a 8/22/2018
Exterior walkway and elevator tower
North elevation

1030017e 8/22/2018
Air-cooled chiller
Roof

1030018a 8/22/2018
Elevator tower
North elevation

1030018e 8/22/2018
Ductwork
Penthouse

1030019a 8/22/2018

Common area open stair

Second floor

1030019e 8/22/2018

Pump equipment

Penthouse

1030020a 8/22/2018

Typical interior glazed wall

Room 226

1030020e 8/22/2018

Exhaust fan

Penthouse

1030021a 8/22/2018

Casework and accessible sink

Room 222

1030021e 8/22/2018

Air handling unit

Roof

1030022a 8/22/2018

Casework and area finishes

Room 221

1030022e 8/22/2018

Fire alarm panel

Second floor, room 219

1030023a 8/22/2018

Glass sectional overhead door

Suite 220

1030023e 8/22/2018

Computer room air conditioner

Second floor, room 219D

1030024a 8/22/2018

Exit door, hardware, and exit signage

Suite 220

1030024e 8/22/2018

Computer room air conditioner

Second floor, room 219D

1030025a 8/22/2018
Entrance doors, hardware, and signage
Common area

1030025e 8/22/2018
Interior lighting
Second floor, room 219D

1030026a 8/22/2018
Typical exterior wall system
Second floor

1030026e 8/22/2018
Fire alarm devices
Second floor, room 219D

1030027a 8/22/2018
Structure at the east common area atrium
Second floor

1030027e 8/22/2018
Fire suppression system
Second floor, room 219H

1030028a 8/22/2018

East atrium skylight

Second floor

1030028e 8/22/2018

Transformers

Second floor, room 219K

1030029a 8/22/2018

Casework with accessible sink

Room 215

1030029e 8/22/2018

Evaporators

Second floor, room 219K

1030030a 8/22/2018

Office area typical finishes

Second floor

1030030e 8/22/2018

UPS

Second floor, room 219K

1030031a 8/22/2018

Unfirestopped penetrations

Room E2-01

1030031e 8/22/2018

Interior lighting

Second floor, room 222

1030032a 8/22/2018

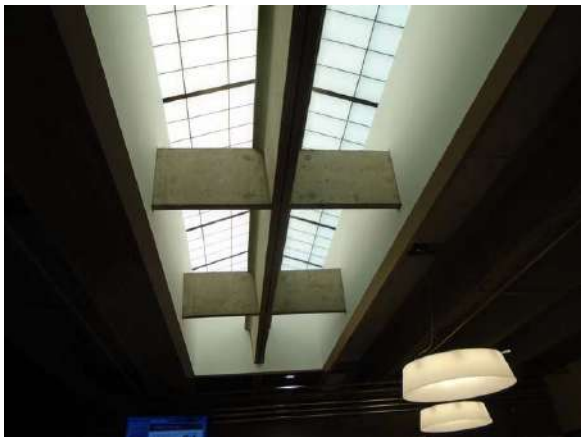
Unfirestopped penetrations

Room IDF2-03

1030032e 8/22/2018

Occupancy sensor

Second floor, room 222



1030033a 8/22/2018

Main atrium skylight structure

Second floor

1030033e 8/22/2018

Sink

Second floor, room 221D

1030034a 8/22/2018

Typical exterior wall system

Second floor

1030034e 8/22/2018

Evaporator

Second floor, room E2-02

1030035a 8/22/2018

Detail at the glazing system

Second floor

1030035e 8/22/2018

Occupancy sensor

Second floor, room 221G

1030036a 8/22/2018

Overhead coiling door

Room 202B

1030036e 8/22/2018

Interior lighting

Second floor, room 221K

1030037a 8/22/2018

Ramp with compliant handrails

South entrance

1030037e 8/22/2018

Interior lighting

Second floor, room 221A

1030038a 8/22/2018

Utility sink

Room J2-01

1030038e 8/22/2018

Interior lighting

Second floor, room 200

1030039a 8/22/2018

Suspended wood ceiling

South entrance

1030039e 8/22/2018

Interior lighting

Second floor, room 213

1030040a 8/22/2018
Vestibule doors, hardware, and signage
South entrance

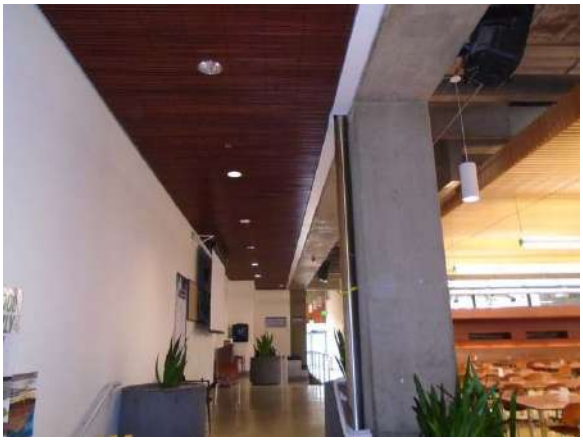
1030040e 8/22/2018
Strobe
Second floor, room 214C

1030041a 8/22/2018
Clerestory windows and wood ceiling finish
Room 260

1030041e 8/22/2018
Water heater
Second floor, room 214E

1030042a 8/22/2018
Accessible drinking fountains without required side protection
Second floor

1030042e 8/22/2018
Panelboards
Second floor, room E2-01



1030043a 8/22/2018

Wall and ceiling finishes

Main dining area

1030043e 8/22/2018

Interior lighting

Second floor, room 202N

1030044a 8/22/2018

Typical dining room finishes

Main dining area

1030044e 8/22/2018

Interior lighting

Second floor, room 202

1030045a 8/22/2018

Servery area

Main dining area

1030045e 8/22/2018

Interior lighting

Second floor, room 272

1030046a 8/22/2018

Dining area stage and ramp access

Main dining area

1030046e 8/22/2018

Interior lighting

Second floor, room 264

1030047a 8/22/2018

Stage access stair with missing handrail

Main dining area

1030047e 8/22/2018

Interior lighting

Second floor, room 264

1030048a 8/22/2018

Suspended wood slat ceiling

Main dining area

1030048e 8/22/2018

Kitchen hood

Second floor, room 253

1030049a 8/22/2018

Overhead coiling grille

Servery

1030049e 8/22/2018

Kitchen hood

Second floor, room 253

1030050a 8/22/2018

Wood overhead coiling doors at food service hatch

Room 261

1030050e 8/22/2018

Kitchen hood

Second floor, room 253

1030051a 8/22/2018

Servery area kitchen equipment

Servery

1030051e 8/22/2018

Interior lighting

Second floor, corridor 263

1030052a 8/22/2018

Servery area floor finish

Servery

1030052e 8/22/2018

Kitchen hood

Second floor, room 259

1030053a 8/22/2018

Casework and area finishes

Servery

1030053e 8/22/2018

Cooler

Second floor, room 259B

1030054a 8/22/2018

Casework with hand sink

Servery

1030054e 8/22/2018

Cooler

Second floor, room 259C

1030055a 8/22/2018
Serving hatch at the meeting rooms
Room 259b

1030055e 8/22/2018
Cooler
Second floor, room 259D

1030056a 8/22/2018
Fire-rated door label
Room 259b

1030056e 8/22/2018
Car operating panel
Elevator cab

1030057a 8/22/2018
Overhead coiling fire door at the kitchen elevator
Corridor H263

1030057e 8/22/2018
Piping
Second floor, room T2-07 pipe chase

1030058a 8/22/2018
Stair with noncompliant and missing handrails
Corridor H263

1030058e 8/22/2018
Interior lighting
Second floor, room 250

1030059a 8/22/2018
Stair with noncompliant and missing handrails
Corridor H263

1030059e 8/22/2018
Interior lighting
Second floor, room 248

1030060a 8/22/2018
Kitchen area finishes
Room 259b

1030060e 8/22/2018
Interior lighting
Second floor, room 233B

1030061a 8/22/2018

Kitchen equipment and finishes

Room 259b

1030061e 8/22/2018

Interior lighting

Second floor, room 231

1030062a 8/22/2018

Accessible elevator control panel

Kitchen elevator

1030062e 8/22/2018

Elevator controller

First floor, room M1-01

1030063a 8/22/2018

Ceiling and wall finishes

Suite 247

1030063e 8/22/2018

Evaporator

First floor, room M1-01

1030064a 8/22/2018
Ramp without required handrails
West elevation

1030064e 8/22/2018
Interior lighting
First floor, room T1-03

1030065a 8/22/2018
Exterior finishes
West elevation

1030065e 8/22/2018
Air handling unit
First floor, room 110B

1030066a 8/22/2018
Detail at replacement glazing
Suite 243

1030066e 8/22/2018
Panelboards
First floor, room 111

1030067a 8/22/2018

Exit door, hardware, and signage

Suite 243

1030067e 8/22/2018

Air handling unit

First floor, room M1-02

1030068a 8/22/2018

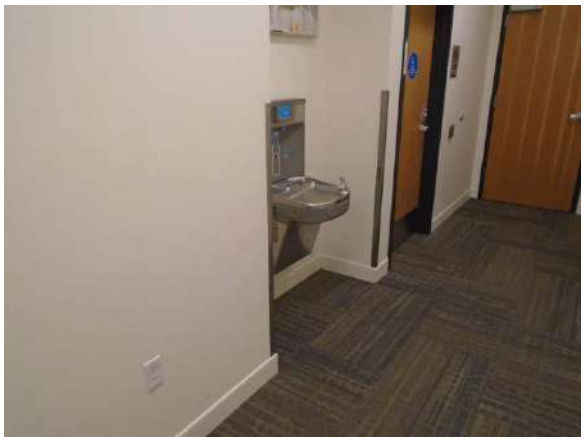
Conference room folding wall

Room 233

1030068e 8/22/2018

Interior lighting

First floor, room 122



1030069a 8/22/2018

Noncompliant drinking fountain

Suite 243

1030069e 8/22/2018

Elevator controller

First floor, room M1-04

1030070a 8/22/2018

Suite area with inadequate exit signage

Suite 243

1030070e 8/22/2018

Elevator machine

First floor, room M1-04

1030071a 8/22/2018

Stairway with noncompliant handrail spacing

Common area

1030071e 8/22/2018

Return fan

First floor, room M1-05

1030072a 8/22/2018

Utility sink

Room J1-03

1030072e 8/22/2018

Supply fan

First floor, room M1-05

1030073a 8/22/2018
Noncompliant drinking fountain
First floor north

1030073e 8/22/2018
Fire alarm panels
First floor, room M1-05

1030074a 8/22/2018
Stairway with noncompliant handrail spacing
First floor north

1030074e 8/22/2018
Supply fan
First floor, room M1-05

1030075a 8/22/2018
Stair with noncompliant handrail profile
Northwest elevation

1030075e 8/22/2018
Variable frequency drive
First floor, room M1-05

1030076a 8/22/2018
Cracked and patched concrete paving
West elevation

1030076e 8/22/2018
Backflow preventer
First floor, room M1-05

1030077a 8/22/2018
Noncompliant steps
West elevation, ground level

1030077e 8/22/2018
Pump equipment
First floor, room M1-05

1030078a 8/22/2018
Steps with noncompliant and missing handrails
Loading dock

1030078e 8/22/2018
Pump equipment
First floor, room M1-05

1030079a 8/22/2018

Ramp with missing handrail

West elevation

1030079e 8/22/2018

Automatic transfer switches

First floor, room E1-02

1030080a 8/22/2018

Loading dock area

West elevation

1030080e 8/22/2018

Panelboard

First floor, room E1-02

1030081a 8/22/2018

Steps with noncompliant and missing handrails

Near room 107

1030081e 8/22/2018

Panelboards

First floor, room E1-02

1030082a 8/22/2018
Mechanical area steps without required handrails
First floor

1030082e 8/22/2018
Interior lighting
First floor, room 116D

1030083a 8/22/2018
Mechanical area steps without required handrails
First floor

1030083e 8/22/2018
Exterior lighting
South elevation

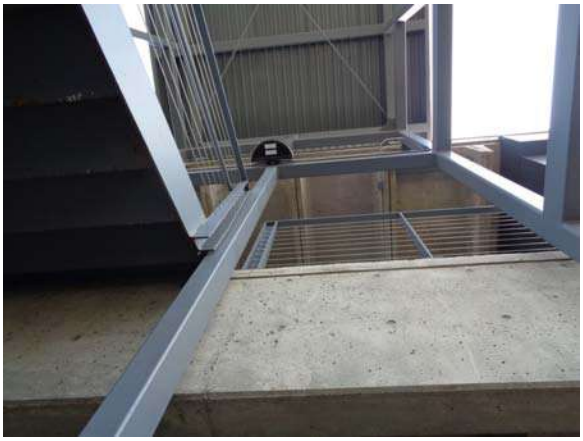
1030084a 8/22/2018
Ramp missing one required handrail
South elevation

1030084e 8/22/2018
Exterior lighting
Site

1030085a 8/22/2018

Typical entrance doors

South elevation



1030085e 8/22/2018

Exterior lighting

Building exterior

1030086a 8/22/2018

Detail at the original glazing system

South elevation

1030086e 8/22/2018

Generator

Site

1030087a 8/22/2018

Covered exterior walk

South elevation

1030087e 8/22/2018

Diesel storage tank

Site

1030088a 8/22/2018

Storefront system

West elevation

1030088e 8/22/2018

Transformers

Site

1030089a 8/22/2018

Elevator tower and building exterior

North elevation

1030090a 8/22/2018

Loading dock area

West elevation

1030091a 8/22/2018

Loading dock area

West elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	PORTLAND COMMUNITY COLLEGE
Asset Number	1120
Asset Name	Science Technology Building
Year Built or Last Energy Renovation	1968

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

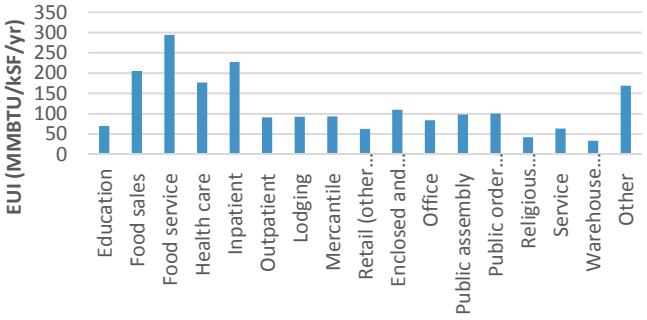
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

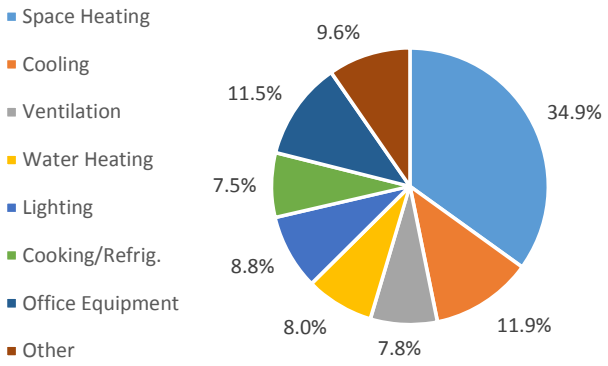


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Plumbing - DHW Heater Efficiency	INSTALL A HIGH-EFFICIENCY WATER HEATER. High efficiency/ENERGY STAR water heaters consume less energy. Consider condensing water heaters that capture the latent heat from water vapor contained in the flue gases.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Infrastructure Condition Assessment

Sylvania Campus Infrastructure
Asset SY00

Inspected August 21, 2018

ISES CORPORATION

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INFRASTRUCTURE CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

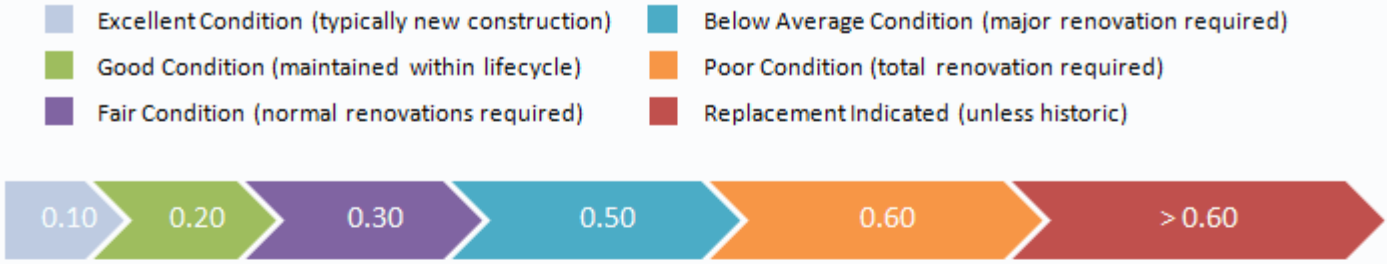
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

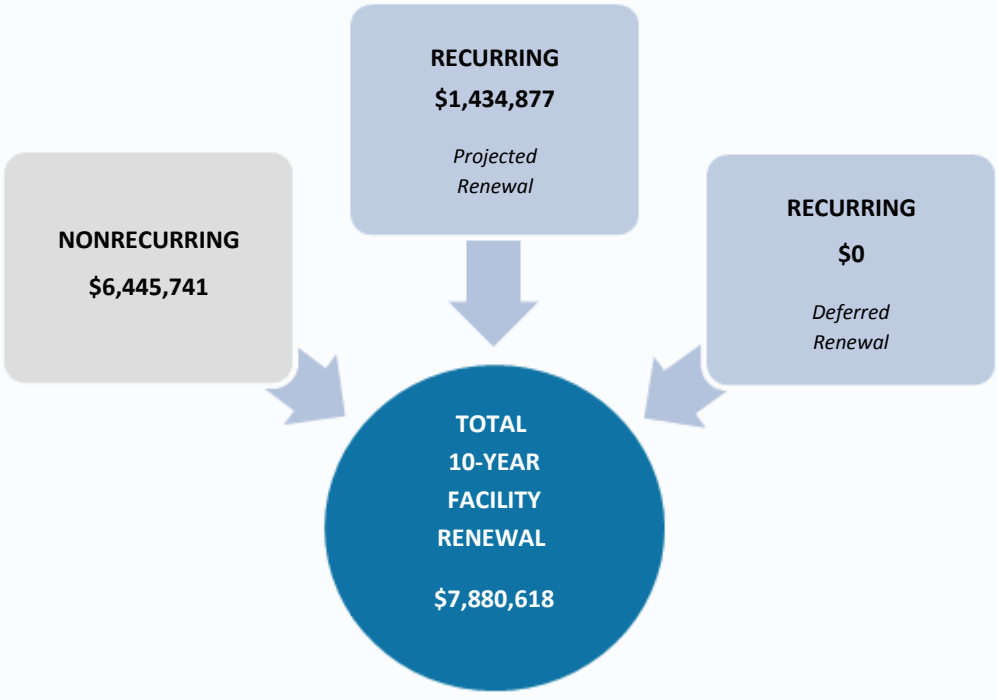
ASSET CODE	SY00		
ASSET NAME	SYLVANIA CAMPUS INFRASTRUCTURE	**CURRENT REPLACEMENT VALUE**	$24,000,000
ASSET USE	Infrastructure	**FACILITY CONDITION NEEDS INDEX**	0.33
YEAR BUILT	1968	**FACILITY CONDITION INDEX**	0.00
GSF	1,211,409	**10-YEAR $/SF**	6.51
INSPECTION DATE	08/21/2018		

FCNI Scale

The FCNI for this asset is **0.33**



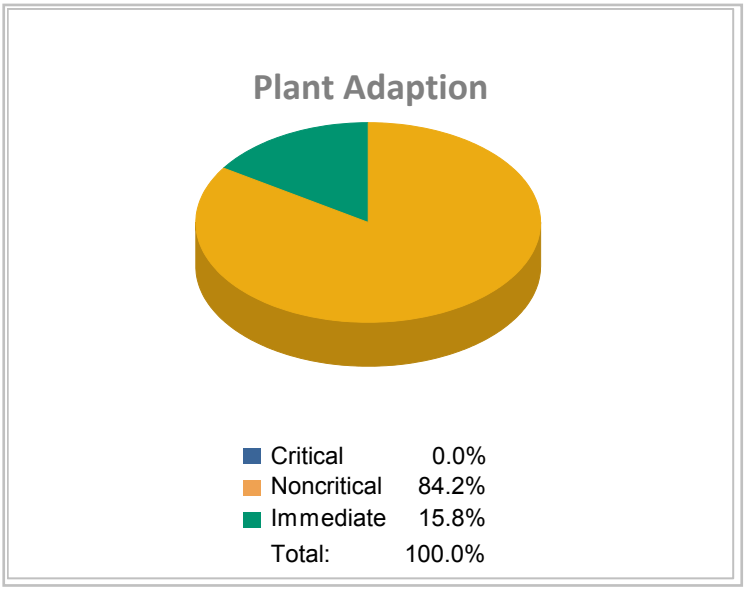
Total Facility Renewal Costs



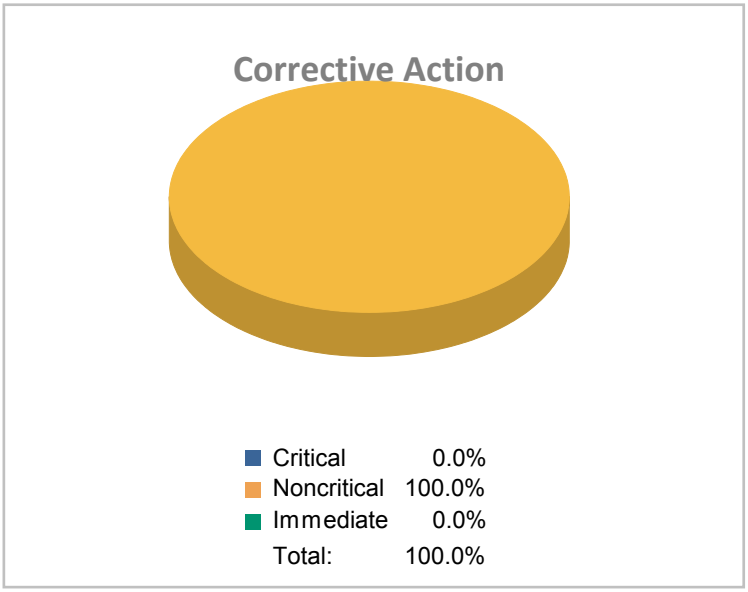
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$575,134**
2 - Critical	**$0**
3 - Noncritical	**$3,071,808**

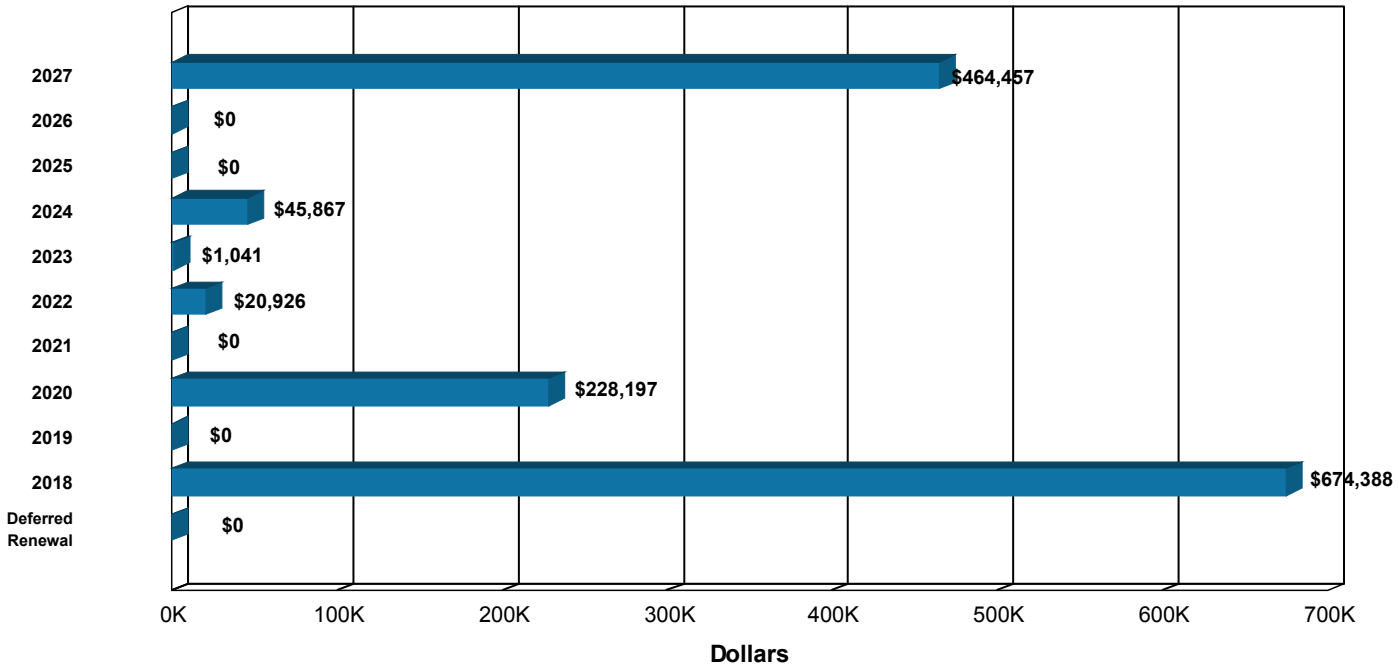


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$2,798,799**

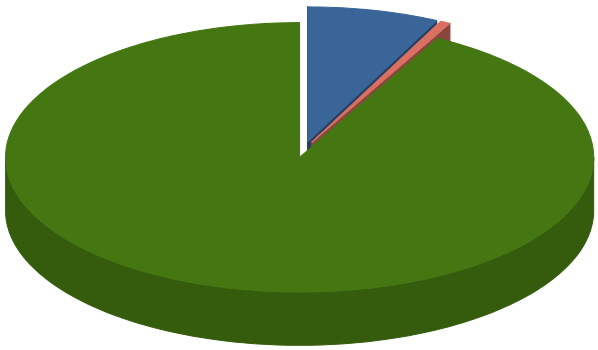


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$575,134	7%
Electrical	$0	0%
Exterior	$0	0%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$0	0%
Interiors	$0	0%
Plumbing	$32,376	0%
Site	$7,273,108	92%
Vert. Trans.	$0	0%
TOTAL	**$7,880,618**	

ASSET SUMMARY

The Sylvania campus of Portland Community College is located at 12000 SW 49th Avenue in Portland, Oregon, in a suburban campus setting. This is the oldest and largest campus and houses the offices of the president. The first phase of the campus was opened in 1968. Additional construction continued through 1972, creating a campus with nine buildings and about 3,000 parking spaces. Due to the sloping site, the campus has a two-tiered circulation system, with stairwells and elevators providing access between levels. The campus now covers about 126.5 acres.

Information for this report was gathered during a site visit completed on August 21, 2018.

Parking Lots

Pavement systems deteriorate with time due to a combination of normal aging and structural fatigue. At a certain point, the rate of deterioration starts to advance rapidly. Once a pavement reaches this stage, major repair or reconstruction is usually required to restore the pavement to good condition. Usually, pavements can be maintained in good condition through simple cost-effective measures. For example, sealing cracks minimizes water intrusion into the pavement structure that can weaken subbase layers leading to structural failure. Application of a surface sealant to asphalt pavements helps seal minor cracks and reduces the environmental affects that age a pavement. Sealing joints in concrete pavements keeps incompressible debris out of the joints that lead to cracking and joint deterioration. The recommendations made in this report are based on the philosophy that the cost to maintain a pavement in good condition is far less than the cost to restore or reconstruct the pavement system. Therefore, priority is given to pavement maintenance projects over pavement restoration (mill and overlay) or reconstruction projects.

The project recommendations in this report are based on commonly used pavement maintenance and repair methods. Before initiating a project, an engineering assessment should be performed, including pavement coring or other analysis to determine the existing pavement structure, and locating and measuring areas that require full-depth patching. Based on that assessment, other pavement maintenance or repair methods may be identified that would be more suitable for the conditions, less disruptive to daily operations, or possibly more cost effective.

The following table summarizes the parking lot pavements reviewed during this assessment. The pavement designations and are based on published maps and field observations. Pavement areas and parking space counts were taken from “PCC Parking and Transportation Areas” drawings dated May 19, 2015, revised July 14, 2017. The accuracy of the pavement area should be confirmed with field measurements before finalizing any projects.

Table 1: Parking Lot Summary

PARKING LOT	CONSTRUCTION DATE	LAST RESURFACED	TOTAL AREA (SF)	PARKING SPACES	ADA SPACES
Ring Road	1968	2009	312,089	325	0
P-1	1972	2012	20,478	60	1
P-2	1968	2010	10,156	22	9
P-3	1968	2008	27,245	29	1
P-4 Automotive	1968	2002	24,114	58	9
P-4 FMS	1968	2007	31,025	16	6
P-5 (D&E)	1968	2013	184,426	535	10
P-7 (A&C)	1968	2012	148,602	341	12
P-8	1968	2005	71,611	220	0
P-9 (K)	1968	2006	134,097	396	12
P-10 (L)	1968	2017	65,713	173	0
P-11	1968	2017	38,883	128	0
P-12	1972	2011	42,707	116	5
P-13	1972	2010	66,749	214	0
P-14	1972	2010	33,514	99	0
		Totals	**1,211,409**	**2732**	**65**

Ring Road: This roadway provides two points of access to the campus and includes the main roadway that surrounds the main campus area. This includes the entrance road (SW 49th Avenue), G-Street, H-Street, and J-Street. Parallel parking is provided along G-Street. These are all asphalt pavements believed to have been constructed during the initial campus development. The final section was constructed in 2009, connecting H-Street to Lot P-1, and completing the ring. The main entrance at Kerr Parkway was reconstructed in 2002. Much of the pavement was overlaid about the same time a new water main was installed in 2009. The overall pavement condition is good to fair, with extensive longitudinal, some block cracking, and isolated areas of alligator cracking. To restore the pavement to good condition, seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. The more heavily traveled section of G-Street from the D-Street entrance to Lot P-5 to the intersection with H-Street should be milled and overlaid to improve the structural capacity of the pavement. The entrance road should be included in this project.

Lot P-1: This parking lot is located west of the College Center building on the west Ring Road (H-Street). It was constructed during the original campus development. Some modifications were made during construction of the Plaza Access Road between the College Center and Health Technology buildings. This parking lot has an asphalt pavement that is in good condition, with some block cracking. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings. Seal the cracks with a polymer-modified crack sealant before applying the surface seal. One isolated area of alligator cracking should be repaired with full-depth patching.

Lot P-2: This parking lot is located west of the Social Science and Technology building on the West Ring road. It was constructed during the original campus development and has an asphalt pavement that is in good condition, with some block cracking. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings. Seal the cracks with a polymer-modified crack sealant before applying the surface seal.

Lot P-3: This parking lot is located east of the College Services Building. It includes the drive from the south Ring Road (G-Street) to the automotive parking and FMS parking entrances. It was constructed during the original campus development and has an asphalt pavement that was resurfaced about 2008 after the completion of the College Services Building. The pavement is in good to fair condition, with longitudinal and blocks cracking throughout and isolated areas of minor alligator cracking in the drive lane. To restore the pavement to good condition, seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. To maintain this pavement, seal the surface within the next five years and re-paint the pavement markings.

Lot P-4: This parking lot has two sections. The first section is located east of the Automotive and Metals Building and is mainly used for automotive parking. A portion of this lot was marked for accessible parking in about 2002. A seal coat has been applied to the drive lanes. The other section is located south of the Automotive and Metals Building and east of the Heating Plant building. This parking lot was partially reconstructed in 2007 during construction of the College Services Building. Portions were restriped in 2017 for accessible parking. A sloped drive connects the upper lot with the lower lot. The asphalt pavement is in fair condition with block cracking throughout and some fatigue cracking in the connector drive. To maintain this pavement, seal the surface within the next five years and repaint the pavement markings.

Lot P-5: This parking lot is located at the southeast corner of the campus, east of the Automotive and Metals, Heating Plant, and College Services Buildings. It includes main drive lanes, identified as D-Street and E-Street. D-Street is the main entrance drive from the east Ring Road (G-Street) and E-Street the main exit drive. Another entrance and exit drive is located at the southwest corner of the parking area. The parking lot was constructed during the original campus development. The northeast quadrant of the parking lot was resurfaced about 2014 and is in good condition. The rest of the parking lot is in fair condition, with extensive areas of longitudinal and block cracking, and isolated areas of alligator cracking, some associated with minor rutting or depressions. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. The entire parking lot, except the northeast quadrant, should be milled and overlaid. After the major repairs and resurfacing are complete, maintain this pavement by sealing the surface and repainting the pavement markings about every seven years.

Lot P-7: This parking lot is located on the east side of the campus, east of the Library and Technology Classroom Buildings. It includes main drive lanes A-Street and C-Street. A-Street is the main entrance drive from the east Ring Road (G-Street) and C-Street is the main exit drive. A concrete bus-parking lane was added on A-Street in 2016. A bus stop for the TriMet regional bus service is located in front of the Library Building and another for the PCC Shuttle is located in front of the Technology Classroom Building. B-Street at the center of the lot has been converted to a walkway and additional parking spaces. The parking lot was constructed during the original campus development. The bus stops were constructed in 2005 after the Technology Classroom Building was completed. C-Street was resurfaced at

the same time, but now has some longitudinal and transverse cracking. The east half of the parking lot was resurfaced about 2012 and is in good condition. The west half and all of D-Street are in fair condition with extensive block cracking and isolated areas of fatigue cracking and rutting. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. The entire parking lot, except the east half, should be milled and overlaid. This includes the main drive lanes. After the major repairs and resurfacing are complete, maintain this pavement by sealing the surface and repainting the pavement markings about every seven years. Clean and seal the joints in the concrete bus parking area about every seven to ten years.

Lot P-8: This parking lot is located on the east side of the campus, just west of the main entrance road (49th Street). It is also used for motorcycle classes. Access is from K-Street on the north side and A-Street on the south side. The parking lot was constructed during the original campus development. Both entrance drives were recently repaired with full-depth patching. The main parking lot pavement is in fair condition, with extensive block cracking throughout. Grass is growing in the previously sealed cracks. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified crack sealant, then mill and overlay the entire pavement. After the resurfacing is complete, maintain this pavement by sealing the surface and repainting the pavement markings about every seven years.

Lot P-9: This parking lot is located in the northeast area of the campus, east of the Communication Technology and Bookstore buildings. Access is from J-Street on the north side and K-Street on the south and west. K-Street is included with this lot. The asphalt pavement is in fair condition with extensive block cracking and isolated areas of alligator cracking and some potholes. Grass is growing in the previously sealed cracks. To restore the pavement, clean and seal the cracks with a polymer-modified crack sealant and repair the distressed areas with full-depth patching. Once the repairs are made, mill and overlay the entire pavement, including the drive lanes. After the resurfacing is complete, maintain this pavement by sealing the surface and repainting the pavement markings about every seven years.

Lot P-10: This parking lot is located in the northeast corner of the campus, north of J-Street and east of L-Street. L-Street is included with this lot. L-Street provides access from J-Street on the south side and G-Street on the north. The parking lot was probably constructed during the initial campus development. A seal coat was applied in 2018 and pavement markings were repainted. It appears cracks were sealed at the same time. In general, the asphalt pavement appears to be in good condition. To maintain the pavement, seal the surface and repaint the pavement markings in about seven years. If needed, clean and seal the cracks with a polymer-modified asphalt sealant.

Lot P-11: This parking lot is located on the north side of the campus, north of J-Street and west of L-Street. Access is from L-Street on the east side and from J-Street on the southwest. The parking lot was probably constructed during the initial campus development. A seal coat was applied in 2018 and pavement markings were repainted. It appears cracks were sealed at the same time. In general, the asphalt pavement appears to be in good condition. To maintain the pavement, seal the surface and repaint the pavement markings in about seven years. If needed, clean and seal the cracks with a polymer-modified asphalt sealant.

Lot P-12: This parking lot is located north of the Health Technology building, east of H-Street and south of J-Street. It was probably constructed during the initial campus development and the surface was sealed and restriped about 2010. The parking area north of the Health Technology building is included in

this lot. This is an asphalt pavement with a large utility cut. The asphalt pavements appear to be in good condition. Block cracking throughout has been mitigated by a program of crack sealing, but some newer cracks are developing. Grass is growing in the joints around the utility cut. To maintain this pavement, seal any open cracks with a polymer-modified crack sealant, then seal the surface, and restripe the pavement markings about every seven years.

Lot P-13: This parking lot is located on the north side of the campus, north of J-Street and east of H-Street. The parking lot was probably constructed during the initial campus development. The asphalt pavement is in fair condition with extensive block cracking throughout, at least one pothole, and some areas of raveling or rough pavement surface. Although the surface was previously sealed, most of the cracks were not. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified crack sealant, repair potholes with full-depth patching, then mill and overlay the entire pavement. Once the restoration work has been completed, maintain the pavement by sealing the pavement surface and restriping the pavement markings about every seven years.

Lot P-14: This parking lot is located on the north side of the campus, north of J-Street and east of H-Street. The parking lot was probably constructed during the initial campus development. The asphalt pavement is in good condition with some block cracking throughout and at least one pothole. Although the surface was previously sealed, most of the cracks were not. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified crack sealant and repair the pothole with full-depth patching. Maintain the pavement by sealing the pavement surface and restriping the pavement markings about every seven years.

Sidewalks

Pedestrian travel is supported by concrete sidewalks and plazas throughout the campus. A unique feature of the interior campus walkways is the two-level walkways. The upper level walkways are breezeway structures attached to the buildings and connected by walking bridges. Most of the hardscape is in good condition, consistent with the age of the campus, and constructed to modern standards. In general, the concrete flatwork should not need major repairs or replacement during the evaluation period. However, some of the walkways on the east side of the campus buildings are uneven, cracked, and faulted. Others have deteriorating joints. Also, the sidewalk on the west side of H-Street has deteriorating joints, especially the section at the J-Street intersection. These concrete sidewalks need to be replaced and upgraded to current standards. Throughout the campus, minor areas need to be repaired. An allowance for replacement of concrete slabs throughout the campus is included in this project.

The plaza on the west side of the Performing Arts Center is a concrete paver system. Some of the pavers are uneven. Grass is growing in between paver blocks in some areas. Although the pavers are in good condition, they will probably need to be removed, the subgrade leveled, and the pavers re-installed. Place a polymer sand between the blocks to lock them into place. Other concrete paver areas are scattered throughout the campus, for use as gathering areas. The concrete paver areas are generally in good condition. Due to their small area, areas that become uneven should be repaired as part of normal site maintenance. Some of these gathering areas include gravel walk areas. The gravel surfaces will

require routine maintenance to keep them level and safe. Also, the gravel walkway east of the Performing Arts Center should be routinely inspected and maintained.

Site Lighting

Parking lot lighting is mainly provided by pole-mounted LED lights, either single or double lamps per pole. These lights were installed in about 2016 to 2017. The LED lights are in good condition and should not need to be replaced during the evaluation period. The area west of the Health Technology building has some older light fixtures that have been updated with LED replacement bulbs. These lights are at the end of their normal service life and should be replaced.

Walkways throughout the campus area are illuminated by pole-mounted LED lights, single lamps per pole. The LED lights are in good condition and should not need to be replaced. In addition, bollard lights are installed along the sidewalks and steps in the walkway between Lots P-5 and P-7. The bollard lights are in good condition and should not need to be replaced.

Site Accessibility

The scope of work addresses accessibility issues related to parking, path of travel from nearby public transportation stops to the campus, path of travel from accessible parking to campus circulation areas, and the overall paths of travel through the campus. Because the campus is on a sloping site and contains different levels, overall site accessibility is fair. Accessibility improvements are needed to comply fully with current ADA Guidelines. Some of these needed improvements were documented in the "Portland Community College Americans with Disabilities Act Barrier Removal Plan" prepared by ISES Corporation in June 2012, and in the "Portland Community College Site Accessibility Assessment" prepared by David Evans and Associates, Inc. in April 2018. Others were noted during the site visit in August 2018.

Path of Travel from Public Transportation Stops: The TriMet bus system has a bus stop on campus in front of the Library. The PCC Shuttle has a bus stop in front of the Technology Classroom building. The bus stops provide direct access from the east sidewalk into the center of the campus. TriMet has additional bus stops that serve the campus, including one at the main entrance on Kerr Parkway and one on the north side at the intersection of G-Street and H-Street. The path of travel from the bus shelter near the main entrance runs into the campus along two concrete walkways. Both connect to walkways along the west side of G-Street, then along the north side of A-Street to the campus. The path is about 5 feet wide and gently sloping. Some areas have cross-slopes that exceed ADA requirements. Curb cuts at road crossings need to be reconstructed to correct deficiencies with landing areas and slopes. These sections of the sidewalk need to be reconstructed. This long path of travel (about 1,200 feet) lacks rest areas. While not mandated by ADA, rest areas could be incorporated with other needed improvements. Also, signage marking the pathway is needed, especially at road crossings.

The path of travel from the north bus stop runs from G-Street along H-Street, and connects to the campus at the Plaza Access Road (lot P-1). The bus stop is an uneven, gravel surface. A new bus stop needs to be constructed with a level walking surface and a landing for the curb cut. The access pathway across G-Street and H-Street is not clearly marked. The pathway along H-Street has isolated areas with

noncompliant cross-slopes. The sidewalk crosses a service drive near the athletic fields. The crossing does not have curb cuts. Curb cuts are either lacking or not compliant at the intersection with J-Street and sidewalks leading to the Health Technology building. Reconstruct portions of the sidewalk to correct noncompliant slopes and construct new curb cuts where needed.

Path of Travel from Parking Areas: Walkways are provided from most of the parking lots to the main campus. Pathways are provided from each lot, but some improvements are required.

Lot P-5 is one of the largest parking areas. Lot P-5 also has a collector aisle added on the north side of E-Street. The sidewalk on the west side of the lot provides access to the central campus circulation pathways. Accessible parking is located along this sidewalk.

Lot P-7 is another large parking lot located on the east side of the Library and Technology Classroom buildings. Bus stops for TriMet and the PCC Shuttle are located along the west access road. Accessible parking spaces are located just east of the bus stop area. The path of travel from the accessible parking is not marked. Also, a raised concrete island between the east and west sides of the accessible parking area restricts travel. The concrete island should be removed and accessible pathways clearly marked across drive lanes. Lot P-7 also has a collector aisle added on the north side of B-Street.

Between Lots P-5 and P-7 is a pedestrian plaza. The plaza provides north-south pathways between the lots. The concrete sidewalks are steeply sloped and need to be reconstructed. The east-west pathway connects to the main campus circulation at the southeast corner of the Technology Classroom Building. This pathway includes a series of steps that have handrails that are not graspable. Remove the existing handrails, and install side and center handrails that meet current codes.

Lot P-3 is a staff lot that mainly serves the College Services Building. There is no designated walkway from the main lot to the building. A crosswalk should be painted across the access drive.

Lot P-4 is mainly a service lot, but accessible parking spaces have been added in both the upper and lower lots. The parking spaces have direct access to sidewalks that connect to the main campus circulation and to the entrances for the Automotive and Metals building. The pathway for the upper lot was been changed with the addition of the Automotive Storage building at the northeast corner of the Automotive and Metals building. A new pathway should be designated with painted markings.

Lot P-9 has accessible parking along K-Street east of the Bookstore. There is no clearly designated path of travel from the parking spaces across the roadway. The curb cut in the sidewalk is not compliant with current codes and needs to be reconstructed. Stairs from K-Street to the main parking lot have center handrails that are not graspable. Remove the existing handrails, and install side and center handrails that meet current codes.

The Lot P-12 access route to the Health Technology building has steps with center handrails that are not graspable. Remove the existing handrails, and install side and center handrails that meet current codes.

Remote lot P-8 has access to sidewalks along G-Street and A-Street. Remote lot P-10 has stair access to a sidewalk along J-Street. The steps only have a center handrail that is not graspable. Remove the existing handrails, and install side and center handrails that meet current codes. Remote lots P-11, P-13, and P-

14 have connecting stairs that provide a path of travel to the main campus circulation areas. The steps only have center handrails that are not graspable. Remove the existing handrails, and install side and center handrails that meet current codes. Lot P-13 also has a concrete sidewalk from the north to the south. The sidewalk cuts through landscape islands, but does not have tactile warnings or painted crosswalks at drive lane crossings.

Accessible Parking: Accessible parking is provided in areas close to the main building entrances or to the main campus circulation paths. Accessible parking is located in lots P-1, P-2, P-3, P-4, P-5, and P-7. Accessible spaces have been removed from lot P-10. The number of accessible parking spaces is more than required. However, some of the accessible parking spaces are not provided with side aisles, as required. Others do not have van accessible parking or have spaces marked as van accessible, but without the eight-foot wide side aisle. These parking areas need to be reconfigured to comply with current requirements. Curb cuts need to be installed or replaced to meet current requirements. Most of the accessible parking spaces have slopes more than two percent and need to be reconstructed to comply with the slope requirements or need to be relocated. Most accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced.

Paths of Travel Through Campus: Because the campus is constructed on a slope, the circulation pathways are on two levels. These levels are connected with exterior stairs and elevators. Most of the exterior stairs have handrails that are not graspable or lack appropriate handrails. Remove the existing handrails and install compliant handrails, where needed. The elevators are part of the buildings, with doors that open to the outside. Elevator accessibility is addressed in the individual building FCA reports. Some sidewalks have slopes (ramps) without handrails and some ramps have handrails on one side only. This includes the sidewalk along the Plaza Access Ramp between the Health Technology and College Center buildings. Add handrails where required.

Underground Utilities

Underground utilities at this site include stormwater, sanitary sewer, water, and fire protection utilities. These are discussed in the following sections. Most of the utilities were installed during the initial campus development. Some improvements have been made to the stormwater and water supply systems over the past ten years.

PCC personnel have expressed a desire to have a more comprehensive method to manage the underground utility assets. Available information about underground utilities is lacking, making asset management difficult. A detailed subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. The survey should include a review of existing documents and recording that information on a comprehensive CAD drawing. The new survey will include field locating visible utility items, such as manholes and vaults, and measuring top and invert elevations and pipe material type and sizes. The information obtained from the field survey will be used to verify the information obtained from the existing document and drawing review and to correct that information, when in error.

Each component of the underground systems has a quantifiable industry standard expected lifecycle. Information related to system performance was reviewed to determine trends that might affect that

lifecycle and the future safety, reliability, and efficiency of the system. The table below shows the expected useful, reliable life of typical underground utility system components.

Table 2: Average Expected Useful Life

COMPONENT	TYPE	USEFUL LIFE (YEARS)
Storm drain pipe	Concrete	100
Storm drain pipe	Terra cotta clay	75
Storm drain pipe	Ductile iron	50
Storm drain pipe	Corrugated metal	45
Manhole	Concrete	100
Manhole	Brick masonry	75
Catch basin/drop Inlet	Concrete	100
Catch basin/drop Inlet	Brick masonry	75
Combo drain	Concrete	100
Combo drain	Brick masonry	75
Sanitary sewer pipe	Concrete	100
Sanitary sewer pipe	Vitrified clay	75
Sanitary sewer pipe	Ductile iron	50
Sanitary sewer pipe	PVC or plastic	50
Manhole	Concrete	100
Manhole	Brick masonry	75
Potable water supply line	PVC or plastic	50
Potable water supply line	Ductile iron	75
Potable water supply line	Cast-iron	75
Fire hydrant	Cast-iron	65
Fire pump	125 hp, 1,000 GPM	25
Domestic water pump	15 hp, electric	20

Source Data: ASHRAE, BOMA, Hartford Ins. Co., ISES Database

The realization of the full expected useful life preserves the original capital investment strategy while accelerated depreciation results in premature expenditure of resources. It should be emphasized that expected useful life values are averaged forecasts based on components that are properly maintained and operated without frequent and/or severe operating conditions. Chronological age is not the primary determinant of service life. In many instances, there is ample evidence of components operating well beyond predicted useful life values. This is why it is important to modify these values based on actual conditions, service history, operating conditions, installation environment, and actual field performance.

In addition, system components reaching the predicted endpoint of expected useful life do not necessarily cease to function. What does occur is a downward trend toward loss of service reliability, a

potential increase in maintenance costs, damage caused by natural events, and possible loss of service due to failure.

Stormwater Drainage Systems

The Sylvania Campus has more than 53 acres of impervious surface creating more than 44 million gallons of runoff in a typical year. The campus is divided into three drainage areas for collection, conveyance, treatment, and disposal of stormwater. Drainage Basin A handles runoff from Lots P-3, P-4 (upper), P-5, P-7, P-8, the main entrance, and the southeast quadrant of the Ring Road (G-Street) and discharges to a surface outfall south of the Ring Road. Drainage Basin B handles runoff from the campus buildings, Lots P-1 and P-2, and the west Ring Road (G-Street) and discharges to a surface outfall west of the Basin A outfall. Flows from the Basin A and B outfalls discharge to Ball Creek, a tributary of Fannin Creek. Drainage Basin C handles runoff from Lots P-9, P-10, P-11, P-12, P-13, J-Street, K-Street, L-Street, the northeast and northwest sections of G-Street, H-Street, and the athletic fields and discharges to an existing stream channel near Lesser Road.

Stormwater is collected through a system of area drains, drop inlets, and curb inlets. Stormwater is conveyed from the various inlets through concrete pipes to the basin outfalls. Concrete manholes provide connection for various inlet pipes.

PCC has a commitment to sustainable practices. As part of this commitment, some improvements to the stormwater drainage systems on this campus have been constructed to improve on-site stormwater quality treatment. This includes a new stormwater detention and treatment facility south of Lot P-5, and a new stormwater treatment manhole south of G-Street. Also, rain gardens were constructed at the College Services Building and at the Learning Garden. Bioswales were added during construction of the west side of the ring road north of Lot P-1 and at the permit parking area near the main entrance. A parking forest was constructed in Lot P-10. Underground detention pipes were installed during the construction of the Technology Classroom and Campus Services buildings.

The following table is an estimate of the stormwater system components on the Sylvania Campus. Information was provided on the PCC Environmental Map for Sylvania Campus, dated July 2008, and from the Portland Maps on-line GIS.

Table 3: Summary of Stormwater Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
Catch basins, concrete	150	each	1968-1972
Area drains	40	each	1968-1972
Stormwater manholes	50	each	1968-1972
Water quality manholes	1	each	2009
Water quality manholes	1	each	2015
8-inch concrete pipe	185	linear feet	1968-1972

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
10-inch concrete pipe	1,315	linear feet	1968-1972
12-inch concrete pipe	5,231	linear feet	1968-1972
15-inch concrete pipe	4,136	linear feet	1968-1972
18-inch concrete pipe	3,702	linear feet	1968-1972
21-inch concrete pipe	197	linear feet	1968-1972
Oil-water separator	2	each	1968-1972
Underground detention pipes	282	feet	2004

Note: some quantities were estimated based on available information

Most of the stormwater infrastructure is 45 to 50 years old. No major problems have been reported and no visual indications of problems were noted during the site visit. Therefore, replacement of the stormwater components should not be needed during the evaluation period.

Drainage collected from Basin C is directly discharged into a stream in the wooded area near Lesser Road without treatment. An engineered system should be designed and constructed to reduce the pollutant loads and the rate of flow from this discharge. In addition, continued measures to reduce the stormwater impacts by increased use of bioswales, rain gardens, and similar measures to increase on-site infiltration and filtration of runoff.

It is important to note that utility infrastructure assets normally encompass more than just a single component and, in most situations, will represent a section or group of materials, i.e. linear footage of installed piping systems. The majority of these systems will continue to operate reliably and safely beyond the ten-year planning horizon of this assessment. However, beyond the next ten years, it will be necessary to re-inspect the systems to ensure that they continue to operate reliably.

Sanitary Sewer

The sanitary sewage system for the campus is a collection and conveyance system. Because the area is relatively flat, the area is served by gravity sewers. PCC does not treat its own sewage but discharges it to the municipal sewer mains, which transport it to the regional wastewater treatment plant. The treatment plant and municipal lines were not part of the ISES evaluation.

Little information was available to perform this assessment. Therefore, quantity estimates in the following table are a best guess based on other on-site utility systems.

Table 4: Summary of Sanitary Sewer System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
10-Inch pipe	1,500	Linear feet	1968-1972

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
12-Inch pipe	1,250	Linear feet	1968-1972
6-inch pipe	1,300	Linear feet	1968-1972
6-inch pipe	800	Linear feet	1984-1995
6-inch pipe	250	Linear feet	2003-2006
Concrete manholes	10	Each	1968-1972
Concrete manholes	5	Each	1984-1995
Concrete manholes	2	Each	2003-2006

No problems were reported with the sanitary sewer conveyance system. Most of the sanitary sewer system is less than 50 years old and should not need to be replaced during the evaluation period.

It is a good policy and a recommendation of this report to develop and conduct a preventative maintenance program for the sanitary sewer system. A vital part of that program is video monitoring the linear assets when and where feasible and jet-washing any built-up debris or solids in the lines and manholes to ensure that the pipes have the maximum flow capacity to handle peak demand. It is recommended that PCC start a program of jet-washing and CCTV inspections. The oldest and/or most problematic lines are typically evaluated first to determine the characteristics of the typical flow and identify any urgent or critical repair or replacement needs. Routinely CCTV inspect a portion of the infrastructure every couple of years and all lines typically at least once every ten years. With the age of this system and its expected lifecycle, it is inevitable that portions will wear out and need to be repaired or replaced. The CCTV inspections will allow PCC to identify problem areas and then plan and budget for repair or replacement.

Water Distribution and Fire Protection

Both potable water and fire protection water are supplied to the campus by direct connection to the city water main on SW Stevenson Street. Sufficient water pressure is available, so no pumps are needed. The main water line is a loop system that surrounds the campus buildings. The water main was replaced in 2009. The potable water and fire protection system appears to be properly sized and in overall good condition. The following table is an estimate of the potable water and fire protection system components that serve the Sylvania Campus.

Table 5: Summary of Potable Water and Fire Protection System Components

MATERIALS	QUANTITY	UNITS	ESTIMATED INSTALL DATE
12-inch water supply pipe	5,800	Linear feet	2009
8-inch water supply pipe	200	Linear feet	1968-1972
4-inch water supply pipe	1,000	Linear feet	1968-1972
Fire hydrants	18	Each	2009

No problems with the water distribution system were reported. Most of the water distribution system is less than 50 years old and should not need replacement during the evaluation period. The new water supply lines and fire hydrants are less than ten years old.

Other Considerations

In reviewing the Portland Community College Facilities Plan, a need for greatly improving the main entry pathway is apparent. This includes improvements for transit buses, passenger vehicles, bicycles, and pedestrians. This would be a major project requiring a wayfinding study, reconstruction of roadways, development of a larger entry plaza, and new directional signage. Until the planning and design work are complete, an exact cost cannot be determined. Therefore, a project with a general allowance for this work is included in the recommendations.

Improvements to site accessibility are also recommended. Implementing the project recommendations in the Site Accessibility section should address most of these issues. In addition, a campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

Another recommendation is the addition of electric vehicle charging stations. One has been installed in Lot P-5. Additional charging stations should be installed in Lots P-5, P-7, and P-9. No guidelines have been established for determining how many stations should be installed. Therefore, it may be better to implement these in phases, perhaps a group of 4 charging stations in one lot and the addition of additional charging stations as the demand dictates.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional inspector examined the infrastructure to determine what repairs or modifications may be necessary to restore the systems to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the site to modern standards without any anticipation of change to layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include space change, program issues, relocation, contingency, or costs that could not be identified or determined from the visual inspection and available information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 21, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
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Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Infrastructure report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of systems and components. The tool for projecting the recurring renewal costs is the Lifecycle Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the systems and components. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards, not original design parameters. This index gives the college a comparison tool for identifying worst case/best case conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory is a list of major systems and components and is based on industry standard lifecycle expectancies. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the system. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the systems and components are not included in the Lifecycle Component Inventory. For each such deficiency, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the second accessibility project identified for asset 0001 would have a project number of 0001AC02 (0001 for the asset number, AC for accessibility, and 02 being the next sequential number for an accessibility project).

Project Classifications

- ### Plant Adaption
  Nonrecurring expenditures required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- ### Corrective Action
  Nonrecurring expenditures needed to correct random and unpredictable deficiencies. Such projects are not related to aligning with codes or standards. Deficiencies classified as Corrective Action could have an effect on site or utility safety and usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- ### Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a system to normal operation

- ### Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements associated with noncritical accessibility needs

  b. actions to bring a system into compliance with current codes

  c. actions to improve the usability of the system

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE

Example: Category Code = EL5A	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	AC2B	0001AC02	01
1	PL1D	0001PL02	02
2	EL4C	0001EL03	04

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	575,134	0	0	0	0	0	0	0	0	0	0	0	0	0	$575,134
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
INTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
PLUMBING	0	0	32,376	0	0	0	0	0	0	0	0	0	0	0	$32,376
HVAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	5,838,231	0	674,388	0	228,197	0	20,926	1,041	45,867	0	0	464,457	$7,273,108
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$575,134	$0	$5,870,607	$0	$674,388	$0	$228,197	$0	$20,926	$1,041	$45,867	$0	$0	$464,457	$7,880,618
TOTAL NONRECURRING PROJECT NEEDS			$6,445,741	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,434,877	

CURRENT REPLACEMENT VALUE	$24,000,000
FACILITY CONDITION NEEDS INDEX	0.33
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
1,211,409	$7,880,618	$6.51

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$575,134	$0	$575,134
EXTERIOR	$0	$0	$0
INTERIOR	$0	$0	$0
PLUMBING	$32,376	$0	$32,376
HVAC	$0	$0	$0
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$0	$0
SITE	$5,838,231	$1,434,877	$7,273,108
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$6,445,741**	**$1,434,877**	**$7,880,618**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
SY00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	B2030	1	Plant Adaption	273,529
SY00AC02	PARKING LOT ACCESSIBILITY UPGRADES	G2020	1	Plant Adaption	216,503
SY00AC03	EXTERIOR STAIR HANDRAIL UPGRADES	G2030	1	Plant Adaption	85,103
SY00PL01	CCTV SANITARY SEWER LINES	D2030	3	Plant Adaption	32,376
SY00SI05	LOTS P-1, P-2, P-3, AND P-4 PAVING RENEWAL	G2020	3	Corrective Action	47,951
SY00SI06	LOT P-5 PAVING RENEWAL	G2020	3	Corrective Action	455,652
SY00SI07	LOT P-7 PAVING RENEWAL	G2020	3	Corrective Action	400,501
SY00SI08	LOT P-8 PAVING RENEWAL	G2020	3	Corrective Action	218,563
SY00SI09	LOT P-9 PAVING RENEWAL	G2020	3	Corrective Action	412,029
SY00SI10	LOTS P-12 AND P-14 PAVING RENEWAL	G2020	3	Corrective Action	43,840
SY00SI11	LOT P-13 PAVING RENEWAL	G2020	3	Corrective Action	203,760
SY00SI01	SUBSURFACE UTILITY ENGINEERING	G2030	3	Plant Adaption	1,084,322
SY00SI03	SITE PEDESTRIAN PAVING RENEWAL	G2030	3	Corrective Action	438,463
SY00SI04	RING ROAD PAVING RENEWAL	G2030	3	Corrective Action	394,342
SY00SI02	WALKWAY PLAZA RECONSTRUCTION	G2050	3	Corrective Action	183,698
SY00SI12	STORMWATER QUALITY UPGRADES	G3030	3	Plant Adaption	836,035
SY00SI15	ELECTRIC VEHICLE CHARGING STATIONS	G4090	3	Plant Adaption	291,829
SY00SI13	SITE WAY FINDING	G9090	3	Plant Adaption	36,209
SY00SI14	CREATE NEW MAIN ENTRY	G9090	3	Plant Adaption	791,037
				TOTAL	**$6,445,741**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
SY00	SA12	DUCTILE IRON PIPE - 10" DIAMETER	SANITARY SEWER PIPE			G3020	2018	351,503
SY00	SA13	DUCTILE IRON PIPE - 12" DIAMETER	SANITARY SEWER PIPE			G3020	2018	322,885
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-2	G2020	2020	4,452
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-14	G2020	2020	14,698
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-12	G2020	2020	18,728
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-4	G2020	2020	24,179
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-13	G2020	2020	29,274
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			RING ROAD	G2020	2020	136,866
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-1	G2020	2022	8,979
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-3	G2020	2022	11,947
SY00	SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	BUS PARKING			G2010	2023	1,041
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-11	G2020	2024	17,051
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-10	G2020	2024	28,816
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-4	G2020	2027	24,179
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-12	G2020	2027	18,728
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-8	G2020	2027	31,405
SY00	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-14	G2020	2027	14,698

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
SY00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-2	G2020	2027	4,452
SY00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-9	G2020	2027	58,809
SY00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-7	G2020	2027	65,167
SY00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-5	G2020	2027	80,880
SY00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-13	G2020	2027	29,274
SY00 SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			RING ROAD	G2020	2027	136,866
						TOTAL	**$1,434,877**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
5	SY00SI05	LOTS P-1, P-2, P-3, AND P-4 PAVING RENEWAL	3	$47,951
6	SY00SI06	LOT P-5 PAVING RENEWAL	3	$455,652
7	SY00SI07	LOT P-7 PAVING RENEWAL	3	$400,501
8	SY00SI08	LOT P-8 PAVING RENEWAL	3	$218,563
9	SY00SI09	LOT P-9 PAVING RENEWAL	3	$412,029
10	SY00SI10	LOTS P-12 AND P-14 PAVING RENEWAL	3	$43,840
11	SY00SI11	LOT P-13 PAVING RENEWAL	3	$203,760
17	SY00SI03	SITE PEDESTRIAN PAVING RENEWAL	3	$438,463
18	SY00SI04	RING ROAD PAVING RENEWAL	3	$394,342
19	SY00SI02	WALKWAY PLAZA RECONSTRUCTION	3	$183,698
		TOTAL FOR CORRECTIVE ACTION		**$2,798,799**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	SY00AC01	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	1	$273,529
2	SY00AC03	EXTERIOR STAIR HANDRAIL UPGRADES	1	$85,103
3	SY00AC02	PARKING LOT ACCESSIBILITY UPGRADES	1	$216,503

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

4	SY00PL01	CCTV SANITARY SEWER LINES	3	$32,376
12	SY00SI12	STORMWATER QUALITY UPGRADES	3	$836,035
13	SY00SI13	SITE WAY FINDING	3	$36,209
14	SY00SI14	CREATE NEW MAIN ENTRY	3	$791,037
15	SY00SI15	ELECTRIC VEHICLE CHARGING STATIONS	3	$291,829
16	SY00SI01	SUBSURFACE UTILITY ENGINEERING	3	$1,084,322
		TOTAL FOR PLANT ADAPTION		**$3,646,942**
		GRAND TOTAL:		**$6,445,741**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	SY00AC01	1	Plant Adaption	CIRCULATION PATHWAY ACCESSIBILITY UPGRADES	$273,529
2	SY00AC03	1	Plant Adaption	EXTERIOR STAIR HANDRAIL UPGRADES	$85,103
3	SY00AC02	1	Plant Adaption	PARKING LOT ACCESSIBILITY UPGRADES	$216,503
				TOTAL FOR ACCESSIBILITY	**$575,134**
4	SY00PL01	3	Plant Adaption	CCTV SANITARY SEWER LINES	$32,376
				TOTAL FOR PLUMBING	**$32,376**
5	SY00SI05	3	Corrective Action	LOTS P-1, P-2, P-3, AND P-4 PAVING RENEWAL	$47,951
6	SY00SI06	3	Corrective Action	LOT P-5 PAVING RENEWAL	$455,652
7	SY00SI07	3	Corrective Action	LOT P-7 PAVING RENEWAL	$400,501
8	SY00SI08	3	Corrective Action	LOT P-8 PAVING RENEWAL	$218,563
9	SY00SI09	3	Corrective Action	LOT P-9 PAVING RENEWAL	$412,029
10	SY00SI10	3	Corrective Action	LOTS P-12 AND P-14 PAVING RENEWAL	$43,840
11	SY00SI11	3	Corrective Action	LOT P-13 PAVING RENEWAL	$203,760
12	SY00SI12	3	Plant Adaption	STORMWATER QUALITY UPGRADES	$836,035
13	SY00SI13	3	Plant Adaption	SITE WAY FINDING	$36,209
14	SY00SI14	3	Plant Adaption	CREATE NEW MAIN ENTRY	$791,037
15	SY00SI15	3	Plant Adaption	ELECTRIC VEHICLE CHARGING STATIONS	$291,829
16	SY00SI01	3	Plant Adaption	SUBSURFACE UTILITY ENGINEERING	$1,084,322
17	SY00SI03	3	Corrective Action	SITE PEDESTRIAN PAVING RENEWAL	$438,463
18	SY00SI04	3	Corrective Action	RING ROAD PAVING RENEWAL	$394,342

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
19	SY00SI02	3	Corrective Action	WALKWAY PLAZA RECONSTRUCTION	$183,698
				TOTAL FOR SITE	**$5,838,231**
				GRAND TOTAL:	**$6,445,741**

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SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

CIRCULATION PATHWAY ACCESSIBILITY UPGRADES

Project Number:	SY00AC01	**Category Code:** AC2A	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	11/13/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 505	Not Applicable	Campus-wide: Floor(s) S

Description

Some sidewalks have running slopes (ramps) without handrails and some ramps have handrails on one side only. Add handrails where required. The path of travel from the parking areas to the campus circulation pathways are not clearly marked. Also, a raised concrete island between the east and west sides of the accessible parking area in Lot P-7 restricts travel. The concrete island should be removed and accessible pathways clearly marked across drive lanes. Some pathways from public bus stops lack curb cuts in sidewalks. Install curb cuts at all crosswalks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted	LF	600	$116	$69,630	$191	$114,594	$184,224
Remove raised concrete island in Lot P-7	SF	400	$4.23	$1,692	$4.66	$1,864	$3,556
Paint crosswalks where pathways cross drive lanes, 6-inch wide lines	EA	14	$27.50	$385	$15.40	$216	$601
Concrete curb ramp construction	EA	6	$666	$3,994	$603	$3,618	$7,612
			Base Material/Labor Costs	**$75,701**		**$120,292**	
			Indexed Material/Labor Costs	**$75,247**		**$121,254**	**$196,501**
					Construction Mark Up at 20.0%		**$39,300**
					Original Construction Cost		**$235,801**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$235,801**
					Professional Fees at 16.0%		**$37,728**
					TOTAL PROJECT COST		**$273,529**

All costs shown as Present Value

EXTERIOR STAIR HANDRAIL UPGRADES

Project Number:	SY00AC03	**Category Code:** AC1A	
Priority Sequence:	2		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	SITE
Date Basis:	11/13/2018	**Element:**	STAIR AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Campus-wide: Floor(s) S
ADAAG	505		

Description

Most of the exterior stairs have handrails that are not graspable or lack appropriate handrails. Remove the existing handrails and install compliant handrails, where needed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	3	$729	$2,188	$663	$1,989	$4,178
Switchback handrail/guardrail system per floor	FLR	21	$1,653	$34,704	$1,061	$22,282	$56,986
			Base Material/Labor Costs	**$36,893**		**$24,272**	
			Indexed Material/Labor Costs	**$36,671**		**$24,466**	**$61,137**
					Construction Mark Up at 20.0%		**$12,227**
					Original Construction Cost		**$73,364**
Date of Original Estimate: 11/13/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$73,364**
					Professional Fees at 16.0%		**$11,738**
					TOTAL PROJECT COST		**$85,103**

All costs shown as Present Value

PARKING LOT ACCESSIBILITY UPGRADES

Project Number:	SY00AC02	**Category Code:** AC1C	
Priority Sequence:	3		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	SITE
Date Basis:	11/13/2018	**Element:**	PARKING

Code Application:		Subclass/Savings:	Project Location:
ADAAG	502	Not Applicable	Campus-wide: Floor(s) S

Description

The number of accessible parking spaces is more than required. However, some of the accessible parking spaces do not have side aisles, as required. Others do not have van accessible parking or have spaces marked as van accessible, but without the 8-foot wide side aisle. These parking areas need to be reconfigured to comply with current requirements. Curb cuts need to be installed or replaced to meet current requirements. Most accessible parking spaces have slopes more than 2 percent and need to be reconstructed to comply with the slope requirements or need to be relocated. Most accessible parking signs are too low (bottom of sign lower than 60 inches) and need to be replaced.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Handicapped parking space, including striping and signage	EA	10	$340	$3,395	$106	$1,061	$4,456
Concrete curb ramp construction	EA	17	$666	$11,316	$603	$10,251	$21,567
Rebuild asphalt pavement to meet slope requirements	SY	1,760	$28.67	$50,459	$35.84	$63,078	$113,538
ADA-compliant parking signage	EA	70	$134	$9,409	$90.93	$6,365	$15,775
			Base Material/Labor Costs	**$74,580**		**$80,755**	
			Indexed Material/Labor Costs	**$74,132**		**$81,401**	**$155,534**
					Construction Mark Up at 20.0%		**$31,107**
					Original Construction Cost		**$186,640**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$186,640**
					Professional Fees at 16.0%		**$29,862**
					TOTAL PROJECT COST		**$216,503**

All costs shown as Present Value

CCTV SANITARY SEWER LINES

Project Number:	SY00PL01	**Category Code:** PL4C	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	PLUMBING
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	11/13/2018	**Element:**	SANITARY WATER COLLECTION

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Where possible, monitor and record via closed circuit television (CCTV) existing flow characteristics and structural conditions of sanitary sewer lines from buildings to connection with City sewer lines. Jetwash the lines before performing the CCTV inspection.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Jetwash sewer lines	LF	5,100	$0.70	$3,570	$1.55	$7,905	$11,475
CCTV sewer lines	LF	5,100	$1.15	$5,865	$1.15	$5,865	$11,730
Base Material/Labor Costs				**$9,435**		**$13,770**	
Indexed Material/Labor Costs				**$9,378**		**$13,880**	**$23,259**
Construction Mark Up at 20.0%							**$4,652**
Original Construction Cost							**$27,910**
Date of Original Estimate: 11/13/2018						**Inflation**	**$0**
Current Year Construction Cost							**$27,910**
Professional Fees at 16.0%							**$4,466**
TOTAL PROJECT COST							**$32,376**

All costs shown as Present Value

LOTS P-1, P-2, P-3, AND P-4 PAVING RENEWAL

Project Number:	SY00SI05	**Category Code:** SI1B	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	8/21/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

These parking lots have an asphalt pavement that is in good condition, with some block cracking and isolated alligator cracking. Seal the cracks with a polymer-modified asphalt sealant and repair isolated areas of alligator cracking with full-depth patching.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Full-depth repair of asphalt pavement	SY	35	$28.67	$1,003	$35.84	$1,254	$2,258
Seal cracks in asphalt pavement	SY	12,558	$1.25	$15,698	$1.31	$16,451	$32,148
			Base Material/Labor Costs	**$16,701**		**$17,705**	
			Indexed Material/Labor Costs	**$16,601**		**$17,847**	**$34,448**
					Construction Mark Up at 20.0%		**$6,890**
					Original Construction Cost		**$41,337**
Date of Original Estimate: 8/21/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$41,337**
					Professional Fees at 16.0%		**$6,614**
					TOTAL PROJECT COST		**$47,951**

All costs shown as Present Value

LOT P-5 PAVING RENEWAL

Project Number:	SY00SI06	**Category Code:** SI1B	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. The entire parking lot, except the northeast quadrant, should be milled and overlaid.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	16,032	$1.25	$20,040	$1.31	$21,002	$41,042
Mill and overlay for asphalt roadway surfaces	SY	16,032	$9.85	$157,915	$7.28	$116,713	$274,628
Full-depth patching of asphalt pavement	SY	180	$28.67	$5,161	$35.84	$6,451	$11,612
Base Material/Labor Costs				**$183,116**		**$144,166**	
Indexed Material/Labor Costs				**$182,017**		**$145,319**	**$327,337**
Construction Mark Up at 20.0%							**$65,467**
Original Construction Cost							**$392,804**
Date of Original Estimate: 11/13/2018						**Inflation**	**$0**
Current Year Construction Cost							**$392,804**
Professional Fees at 16.0%							**$62,849**
TOTAL PROJECT COST							**$455,652**

All costs shown as Present Value

LOT P-7 PAVING RENEWAL

Project Number:	SY00SI07
Priority Sequence:	7
Priority Class:	Noncritical
Project Class:	Corrective Action
Date Basis:	11/13/2018

Category Code: SI1B

System:	SITE
Component:	ACCESS
Element:	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The east half of the parking lot was resurfaced in about 2012 and is in good condition. The west half and all of D-Street are in fair condition with extensive block cracking and isolated areas of fatigue cracking and rutting. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. The entire parking lot, except the east half, should be milled and overlaid. This includes the main drive lanes.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	14,020	$1.25	$17,525	$1.31	$18,366	$35,891
Mill and overlay for asphalt roadway surfaces	SY	14,020	$9.85	$138,097	$7.28	$102,066	$240,163
Full-depth patching of asphalt pavement	SY	180	$28.67	$5,161	$35.84	$6,451	$11,612
			Base Material/Labor Costs	**$160,783**		**$126,883**	
			Indexed Material/Labor Costs	**$159,818**		**$127,898**	**$287,716**
					Construction Mark Up at 20.0%		**$57,543**
					Original Construction Cost		**$345,259**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$345,259**
					Professional Fees at 16.0%		**$55,241**
					TOTAL PROJECT COST		**$400,501**

All costs shown as Present Value

LOT P-8 PAVING RENEWAL

Project Number:	SY00SI08	**Category Code:** SI1B	
Priority Sequence:	8		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The main parking lot pavement is in fair condition, with extensive block cracking throughout. Grass is growing in the previously sealed cracks. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified crack sealant, then mill and overlay the entire pavement.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	7,957	$1.25	$9,946	$1.31	$10,424	$20,370
Mill and overlay for asphalt roadway surfaces	SY	7,957	$9.85	$78,376	$7.28	$57,927	$136,303
Full-depth patching of asphalt pavement	SY	5	$28.67	$143	$35.84	$179	$323
			Base Material/Labor Costs	**$88,466**		**$68,530**	
			Indexed Material/Labor Costs	**$87,935**		**$69,078**	**$157,013**
					Construction Mark Up at 20.0%		**$31,403**
					Original Construction Cost		**$188,416**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$188,416**
					Professional Fees at 16.0%		**$30,147**
					TOTAL PROJECT COST		**$218,563**

All costs shown as Present Value

LOT P-9 PAVING RENEWAL

Project Number:	SY00SI09	**Category Code:** SI1B	
Priority Sequence:	9		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The asphalt pavement is in fair condition with extensive block cracking and isolated areas of alligator cracking and some potholes. Grass is growing in the previously sealed cracks. To restore the pavement, clean and seal the cracks with a polymer-modified crack sealant and repair the distressed areas with full-depth patching. Once the repairs are made, mill and overlay the entire pavement, including the drive lanes.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	14,900	$1.25	$18,625	$1.31	$19,519	$38,144
Mill and overlay for asphalt roadway surfaces	SY	14,900	$9.85	$146,765	$7.28	$108,472	$255,237
Full-depth patching of asphalt pavement	SY	40	$28.67	$1,147	$35.84	$1,434	$2,580
			Base Material/Labor Costs	**$166,537**		**$129,425**	
			Indexed Material/Labor Costs	**$165,538**		**$130,460**	**$295,998**
					Construction Mark Up at 20.0%		**$59,200**
					Original Construction Cost		**$355,197**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$355,197**
					Professional Fees at 16.0%		**$56,832**
					TOTAL PROJECT COST		**$412,029**

All costs shown as Present Value

LOTS P-12 AND P-14 PAVING RENEWAL

Project Number:	SY00SI10	**Category Code:** SI1B	
Priority Sequence:	10		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

Lot P-12 is an asphalt pavement with a large utility cut. The asphalt pavements appear to be in good condition. Block cracking throughout has been mitigated by a program of crack sealing, but some newer cracks are developing. Grass is growing in the joints around the utility cut. The Lot P-14 asphalt pavement is in good condition with some block cracking throughout and at least one pothole. Although the surface was previously sealed, most of the cracks were not. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified crack sealant and repair the pothole with full-depth patching.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	12,162	$1.25	$15,203	$1.31	$15,932	$31,135
Full-depth patching of asphalt pavement	SY	5	$28.67	$143	$35.84	$179	$323
			Base Material/Labor Costs	**$15,346**		**$16,111**	
			Indexed Material/Labor Costs	**$15,254**		**$16,240**	**$31,494**
					Construction Mark Up at 20.0%		**$6,299**
					Original Construction Cost		**$37,793**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$37,793**
					Professional Fees at 16.0%		**$6,047**
					TOTAL PROJECT COST		**$43,840**

All costs shown as Present Value

LOT P-13 PAVING RENEWAL

Project Number:	SY00SI11	**Category Code:** SI1B	
Priority Sequence:	11		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The asphalt pavement is in fair condition with extensive block cracking throughout, at least one pothole, and some areas of raveling or rough pavement surface. Although the surface was previously sealed, most of the cracks were not. To restore the pavement to good condition, clean and seal the cracks with a polymer-modified crack sealant, repair potholes with full-depth patching, then mill and overlay the entire pavement.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	7,417	$1.25	$9,271	$1.31	$9,716	$18,988
Mill and overlay for asphalt roadway surfaces	SY	7,417	$9.85	$73,057	$7.28	$53,996	$127,053
Full-depth patching of asphalt pavement	SY	5	$28.67	$143	$35.84	$179	$323
			Base Material/Labor Costs	**$82,472**		**$63,891**	
			Indexed Material/Labor Costs	**$81,977**		**$64,402**	**$146,380**
					Construction Mark Up at 20.0%		**$29,276**
					Original Construction Cost		**$175,655**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$175,655**
					Professional Fees at 16.0%		**$28,105**
					TOTAL PROJECT COST		**$203,760**

All costs shown as Present Value

STORMWATER QUALITY UPGRADES

Project Number:	SY00SI12	**Category Code:** SI5E	
Priority Sequence:	12		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	11/13/2018	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Undefined: Floor(s) S

Description

Drainage collected from Basin C is directly discharged into a stream in the wooded area near Lesser Road without treatment. An engineered system should be designed and constructed to reduce the pollutant loads and the rate of flow from this discharge. In addition, continued measures to reduce the stormwater impacts by increased use of bioswales, rain gardens, and similar measures to increase on-site infiltration and filtration of runoff.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Planning and design of stormwater management systems	LOT	1	$50,000	$50,000	$50,000	$50,000	$100,000
Implement stormwater quality improvements	LOT	1	$250,000	$250,000	$250,000	$250,000	$500,000
			Base Material/Labor Costs	**$300,000**		**$300,000**	
			Indexed Material/Labor Costs	**$298,200**		**$302,400**	**$600,600**
					Construction Mark Up at 20.0%		**$120,120**
					Original Construction Cost		**$720,720**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$720,720**
					Professional Fees at 16.0%		**$115,315**
					TOTAL PROJECT COST		**$836,035**

All costs shown as Present Value

SITE WAY FINDING

Project Number:	SY00SI13	**Category Code:** SI1A	
Priority Sequence:	13		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	ACCESS
Date Basis:	11/14/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

A campus wayfinding and directional signage project is recommended, with an emphasis on identification of accessible pathways.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wayfinding study	LOT	1	$0.00	$0	$10,000	$10,000	$10,000
Install signage	LOT	1	$14,000	$14,000	$2,000	$2,000	$16,000
Base Material/Labor Costs				**$14,000**		**$12,000**	
Indexed Material/Labor Costs				**$13,916**		**$12,096**	**$26,012**
Construction Mark Up at 20.0%							**$5,202**
Original Construction Cost							**$31,214**
Date of Original Estimate: 11/14/2018						**Inflation**	**$0**
Current Year Construction Cost							**$31,214**
Professional Fees at 16.0%							**$4,994**
TOTAL PROJECT COST							**$36,209**

All costs shown as Present Value

CREATE NEW MAIN ENTRY

Project Number:	SY00SI14	**Category Code:** SI4A	
Priority Sequence:	14		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/14/2018	**Element:**	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

In reviewing the Portland Community College Facilities Plan, a need for greatly improving the main entry pathway is apparent. This includes improvements for transit buses, passenger vehicles, bicycles, and pedestrians. This would be a major project requiring a wayfinding study, reconstruction of roadways, development of a larger entry plaza, and new directional signage. Until the planning and design work are complete, an exact cost cannot be determined. Therefore, a project with a general allowance for this work is included in the recommendations.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Planning and design	LOT	1	$0.00	$0	$50,000	$50,000	$50,000
New road construction	LOT	1	$188,000	$188,000	$235,000	$235,000	$423,000
New sidewalk construction	LOT	1	$45,000	$45,000	$49,000	$49,000	$94,000
			Base Material/Labor Costs	**$233,000**		**$334,000**	
			Indexed Material/Labor Costs	**$231,602**		**$336,672**	**$568,274**
					Construction Mark Up at 20.0%		**$113,655**
					Original Construction Cost		**$681,929**
Date of Original Estimate:	11/14/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$681,929**
					Professional Fees at 16.0%		**$109,109**
					TOTAL PROJECT COST		**$791,037**

All costs shown as Present Value

ELECTRIC VEHICLE CHARGING STATIONS

Project Number:	SY00SI15	**Category Code:** SI5B	
Priority Sequence:	15		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Plant Adaption	**Component:**	INFRASTRUCTURE
Date Basis:	11/14/2018	**Element:**	ELECTRICAL

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The Facilities Plan recommends the addition of electric vehicle charging stations. One has been installed in Lot P-5. Additional charging stations should be installed in Lots P-5, P-7, and P-9. No guidelines have been established for determining how many stations should be installed. Therefore, it may be better to implement these in phases, perhaps a group of four charging stations in one lot and the addition of additional charging stations as the demand dictates.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
EV charging station, double-unit	EA	12	$12,100	$145,200	$5,400	$64,800	$210,000
			Base Material/Labor Costs	**$145,200**		**$64,800**	
			Indexed Material/Labor Costs	**$144,329**		**$65,318**	**$209,647**
						Construction Mark Up at 20.0%	**$41,929**
						Original Construction Cost	**$251,577**
Date of Original Estimate: 11/14/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$251,577**
						Professional Fees at 16.0%	**$40,252**
						TOTAL PROJECT COST	**$291,829**

All costs shown as Present Value

SUBSURFACE UTILITY ENGINEERING

Project Number:	SY00SI01
Priority Sequence:	16
Priority Class:	Noncritical
Project Class:	Plant Adaption
Date Basis:	11/13/2018

Category Code: SI4A

System:	SITE
Component:	GENERAL
Element:	OTHER

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

Available information about underground utilities is lacking, making asset management difficult. A level C subsurface utility engineering survey should be performed to provide more comprehensive information about underground utilities, including type, size, age, and location. Start with a level D survey that includes review of existing documents and recording that information on a comprehensive CAD drawing. The level C survey will include field surveying to locate visible utility items, such as manholes and vaults, and measuring invert elevations and pipe sizes. The information obtained from the level C survey will be used to field verify the information obtained from the level D survey and to correct that information, when in error.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Level D subsurface utility survey	LOT	1	$17,290	$17,290	$350,487	$350,487	$367,777
Level C subsurface utility survey	LOT	1	$2,218	$2,218	$403,060	$403,060	$405,278
			Base Material/Labor Costs	**$19,508**		**$753,547**	
			Indexed Material/Labor Costs	**$19,391**		**$759,575**	**$778,967**
					Construction Mark Up at 20.0%		**$155,793**
					Original Construction Cost		**$934,760**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$934,760**
					Professional Fees at 16.0%		**$149,562**
					TOTAL PROJECT COST		**$1,084,322**

All costs shown as Present Value

SITE PEDESTRIAN PAVING RENEWAL

Project Number:	SY00SI03	**Category Code:** SI1A	
Priority Sequence:	17		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Campus-wide: Floor(s) S

Description

The plaza on the west side of the Performing Arts Center is a concrete paver system. Some of the pavers are uneven and grass is growing in between paver blocks in some areas. Although the pavers are in good condition, they will probably need to be removed, the subgrade leveled, and the pavers re-installed. Place a polymer sand between the blocks to lock them into place. Additionally, some of the walkways on the east side of the campus buildings are uneven, cracked, and faulted and others have deteriorating joints. Also, the sidewalk on the west side of H-Street has deteriorating joints. These concrete sidewalks need to be replaced and upgraded to current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Remove and reinstall brick pedestrian pavers	SF	18,000	$3.41	$61,380	$10.22	$183,960	$245,340
Replace pedestrian concrete walkways	SF	7,700	$4.23	$32,571	$4.66	$35,882	$68,453
Base Material/Labor Costs				**$93,951**		**$219,842**	
Indexed Material/Labor Costs				**$93,387**		**$221,601**	**$314,988**
Construction Mark Up at 20.0%							**$62,998**
Original Construction Cost							**$377,986**
Date of Original Estimate: 11/13/2018						**Inflation**	**$0**
Current Year Construction Cost							**$377,986**
Professional Fees at 16.0%							**$60,478**
TOTAL PROJECT COST							**$438,463**

All costs shown as Present Value

RING ROAD PAVING RENEWAL

Project Number:	SY00SI04	**Category Code:** SI1B	
Priority Sequence:	18		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/13/2018	**Element:**	VEHICULAR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Item Only: Floor(s) S

Description

The overall pavement condition is good to fair, with extensive longitudinal, some block cracking, and isolated areas of alligator cracking. To restore the pavement to good condition, seal the cracks with a polymer-modified asphalt and repair distressed areas with full-depth patching. The more heavily traveled section of G-Street from the D-Street entrance to Lot P-5 to the intersection with H-Street should be milled and overlaid to improve the structural capacity of the pavement. The entrance road should be included in this project.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Crack sealant for asphalt paving	SY	22,062	$1.25	$27,578	$1.31	$28,901	$56,479
Mill and overlay asphalt roadway surfaces	SY	12,615	$9.85	$124,258	$7.28	$91,837	$216,095
Full-depth patching of distressed asphalt pavement	SY	165	$28.67	$4,731	$35.84	$5,914	$10,644
			Base Material/Labor Costs	**$156,566**		**$126,652**	
			Indexed Material/Labor Costs	**$155,626**		**$127,665**	**$283,292**
					Construction Mark Up at 20.0%		**$56,658**
					Original Construction Cost		**$339,950**
Date of Original Estimate: 11/13/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$339,950**
					Professional Fees at 16.0%		**$54,392**
					TOTAL PROJECT COST		**$394,342**

All costs shown as Present Value

WALKWAY PLAZA RECONSTRUCTION

Project Number:	SY00SI02	**Category Code:** SI2A	
Priority Sequence:	19		
Priority Class:	Noncritical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	LANDSCAPE
Date Basis:	11/13/2018	**Element:**	GRADE/FLORA

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Area Wide: Floor(s) S

Description

Between Lots P-5 and P-7 is a pedestrian plaza that provides north-south pathways between the lots. The concrete sidewalks are steeply sloped and need to be reconstructed. The east-west pathway connects to the main campus circulation at the southeast corner of the Technology Classroom Building. This pathway includes a series of steps that have handrails that are not graspable. Remove the existing handrails, and install side and center handrails that meet current codes.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Regrade plaza area and restore landscaping	SF	22,000	$1.33	$29,260	$1.99	$43,780	$73,040
Reconstruct plaza sidewalks	SF	6,600	$4.23	$27,918	$4.66	$30,756	$58,674
			Base Material/Labor Costs	**$57,178**		**$74,536**	
			Indexed Material/Labor Costs	**$56,835**		**$75,132**	**$131,967**
					Construction Mark Up at 20.0%		**$26,393**
					Original Construction Cost		**$158,361**
Date of Original Estimate:	11/13/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$158,361**
					Professional Fees at 16.0%		**$25,338**
					TOTAL PROJECT COST		**$183,698**

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SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE04	COM EXTERIOR BOLLARD LIGHTING			WALKWAY PLAZA	21	EA	$27,637	2005	20	4	2029
LE05	COM EXTERIOR POLE ONLY - TALL (>=21 FT, POLE, 4 ARMS)			PARKING LOTS	131	EA	$576,696	2016	40		2056
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			CAMPUS WALKWAYS	40	EA	$77,904	2010	40		2050
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			CAMPUS WALKWAYS	4	EA	$7,790	1995	40		2035
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			WEST OF HT	4	EA	$17,447	2010	20		2030
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			PEDESTRIAN WALKWAYS	41	EA	$178,832	2010	20		2030
LE08	COM EXTERIOR POLE ARM FIXTURE PREM (LED) NO POLE OR ARM			PARKING LOTS	178	EA	$776,393	2016	20		2036
SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	BUS PARKING			160	LF	$1,041	2016	7		2023
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-10	7,301	SY	$28,816	2017	7		2024
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-11	4,320	SY	$17,051	2017	7		2024
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-12	4,745	SY	$18,728	2010	7	3	2020
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-13	7,417	SY	$29,274	2010	7	3	2020
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-14	3,724	SY	$14,698	2010	7	3	2020
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-1	2,275	SY	$8,979	2012	7	3	2022
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-2	1,128	SY	$4,452	1968	7	45	2020

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-3	3,027	SY	$11,947	2008	7	7	2022
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-4	6,126	SY	$24,179	1968	7	45	2020
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			RING ROAD	34,677	SY	$136,866	1968	7	45	2020
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-5	20,492	SY	$80,880	1968	7	52	2027
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-7	16,511	SY	$65,167	1968	7	52	2027
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-8	7,957	SY	$31,405	1968	7	52	2027
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE			P-9	14,900	SY	$58,809	1968	7	52	2027
FH01	FIRE HYDRANT			SITE	18	EA	$191,489	2009	65		2074
PF16	DUCTILE IRON PIPE - 12" DIAMETER	MAIN WATER LOOP			5,800	LF	$1,230,073	2009	75		2084
PF16	DUCTILE IRON PIPE - 12" DIAMETER	WATER SUPPLY PIPE			5,800	LF	$1,230,073	2009	75		2084
PF16	DUCTILE IRON PIPE - 12" DIAMETER	WATER SUPPLY PIPE			5,800	LF	$1,230,073	2009	75		2084
PF14	DUCTILE IRON PIPE - 8" DIAMETER	WATER SUPPLY PIPE			200	LF	$38,797	1968	75		2043
SA10	DUCTILE IRON PIPE - 6" DIAMETER	SANITARY SEWER PIPE			1,300	LF	$223,962	1968	75		2043
SA10	DUCTILE IRON PIPE - 6" DIAMETER	SANITARY SEWER PIPE			800	LF	$137,823	1984	75		2059
SA10	DUCTILE IRON PIPE - 6" DIAMETER	SANITARY SEWER PIPE			250	LF	$43,070	2003	75		2078

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SA12	DUCTILE IRON PIPE - 10" DIAMETER	SANITARY SEWER PIPE			1,500	LF	$351,503	1968	50		2018
SA13	DUCTILE IRON PIPE - 12" DIAMETER	SANITARY SEWER PIPE			1,250	LF	$322,885	1968	50		2018
SA35	CONCRETE MANHOLE - 5 TO 10 FT DEEP	SANITARY SEWER MANHOLE			10	EA	$68,361	1968	100		2068
SA35	CONCRETE MANHOLE - 5 TO 10 FT DEEP	SANITARY SEWER MANHOLE			5	EA	$34,181	1984	100		2084
SA35	CONCRETE MANHOLE - 5 TO 10 FT DEEP	SANITARY SEWER MANHOLE			2	EA	$13,672	2003	100		2103
SA35	CONCRETE MANHOLE - 5 TO 10 FT DEEP	STORMWATER MANHOLE			50	EA	$341,807	1968	100		2068
SD07	CONCRETE PIPE - 10" DIAMETER	STORM DRAIN PIPE			1,315	LF	$251,466	1968	100		2068
SD08	CONCRETE PIPE - 12" DIAMETER	STORM DRAIN PIPE			5,231	LF	$1,103,073	1968	100		2068
SD09	CONCRETE PIPE - 15" DIAMETER	STORM DRAIN PIPE			4,136	LF	$846,246	1968	100		2068
SD10	CONCRETE PIPE - 18" DIAMETER	STORM DRAIN PIPE			3,702	LF	$778,685	1968	100		2068
SD25	HDPE PLASTIC PIPE - 48" DIAMETER	UNDERGROUND STORMWATER DETENTION			282	LF	$82,842	2004	70		2074
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	STORM DRAIN INLET			150	EA	$484,778	1968	100		2068
SD45	CONCRETE DROP INLET - LESS THAN 5 FT DEEP	AREA DRAINS			40	EA	$129,274	1968	100		2068
SD65	CONCRETE MANHOLE - 15 TO 20 FT DEEP	WATER QUALITY MANHOLE			1	EA	$17,623	2009	100		2109

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SD65	CONCRETE MANHOLE - 15 TO 20 FT DEEP	STORMWATER QUALITY MANHOLE			1	EA	$26,434	2015	100		2115
SD68	CONCRETE PIPE - 8" DIAMETER	STORM DRAIN PIPE			185	LF	$35,467	1968	100		2068
SD70	CONCRETE PIPE - 21" DIAMETER	STORM DRAIN PIPE			197	LF	$54,367	1968	100		2068
						Grand Total:	$11,463,016				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. SY00 for DR

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G3020	DUCTILE IRON PIPE - 10" DIAMETER	SANITARY SEWER PIPE	1,500	LF	$351,503	2018
G3020	DUCTILE IRON PIPE - 12" DIAMETER	SANITARY SEWER PIPE	1,250	LF	$322,885	2018
	2018	PROJECTED COMPONENT REPLACEMENT COST			$674,388	

No Projected Component Replacement Cost for Asset No. SY00 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,128	SY	$4,723	2020
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		6,126	SY	$25,651	2020
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		34,677	SY	$145,201	2020
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		4,745	SY	$19,868	2020
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		7,417	SY	$31,057	2020
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,724	SY	$15,593	2020

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

	2020	**PROJECTED COMPONENT REPLACEMENT COST**	**$242,094**	

No Projected Component Replacement Cost for Asset No. SY00 for 2021

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		2,275	SY	$10,106	2022
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,027	SY	$13,447	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$23,553**	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2010	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	BUS PARKING	160	LF	$1,207	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,207**	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		7,301	SY	$34,408	2024
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		4,320	SY	$20,359	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$54,767**	

COMPONENT RENEWAL COST BY YEAR

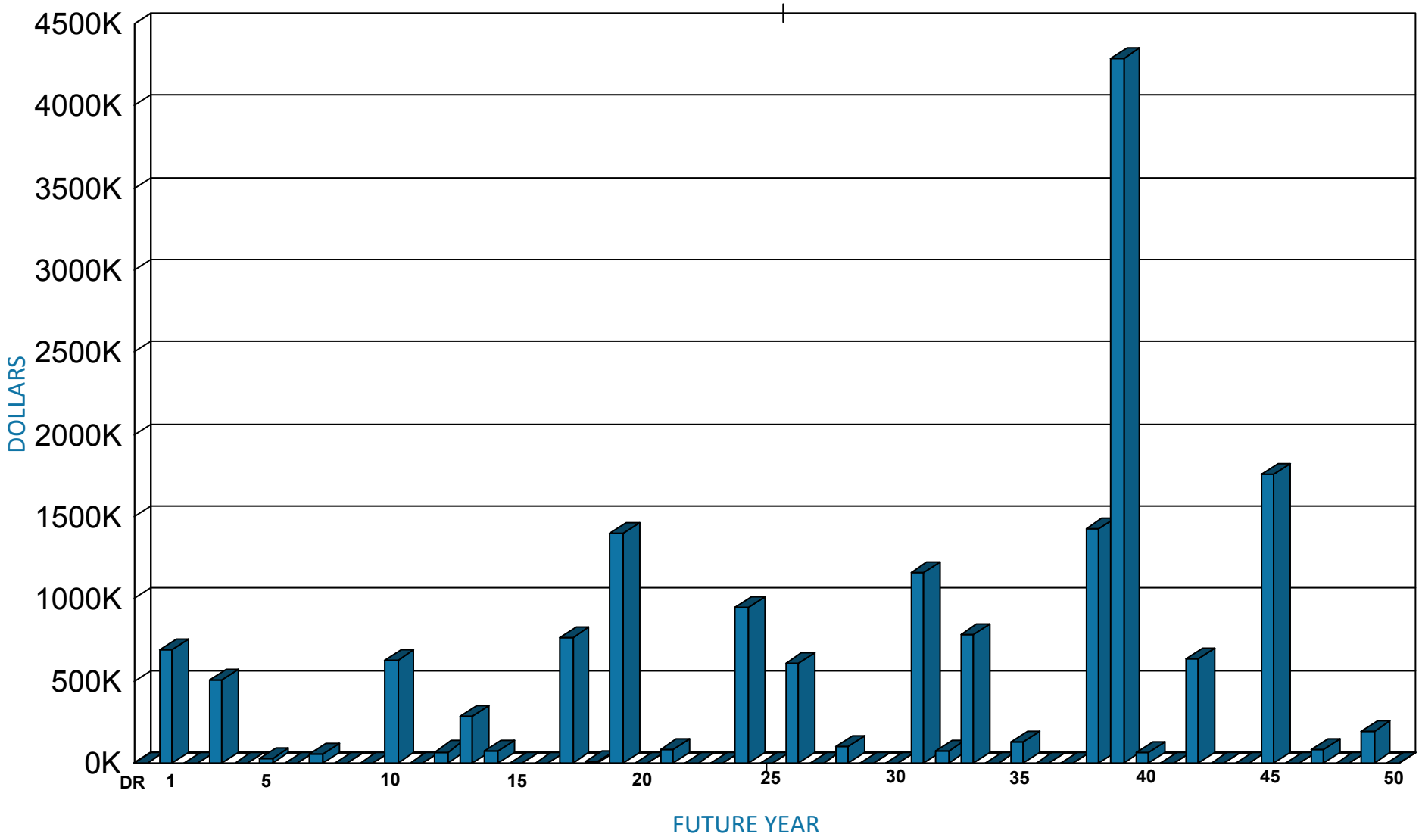
All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. SY00 for 2025

No Projected Component Replacement Cost for Asset No. SY00 for 2026

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		1,128	SY	$5,809	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		6,126	SY	$31,548	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		34,677	SY	$178,579	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		20,492	SY	$105,529	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		16,511	SY	$85,028	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		7,957	SY	$40,977	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		14,900	SY	$76,732	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		4,745	SY	$24,436	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		7,417	SY	$38,196	2027
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		3,724	SY	$19,178	2027
	2027	**PROJECTED COMPONENT REPLACEMENT COST**			**$606,012**	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $0.12

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SECTION 5

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SY00001a 8/21/2018

Entrance sign

Main Entrance

SY00002a 8/21/2018

Entrance road with median and longitudinal and transverse cracking

49th Avenue

SY00003a 8/21/2018

Failing patch

49th Avenue at G-Street

SY00004a 8/21/2018

Isolated alligator cracking

G-Street

SY00005a 8/21/2018

Transverse crack

G-Street

SY00006a 8/21/2018

Isolated alligator cracking and transverse cracking

G-Street

SY00007a 8/21/2018
Alligator cracking and minor rutting
G-Street

SY00008a 8/21/2018
Start of pavement overlay
G-Street at H-Street

SY00009a 8/21/2018
Longitudinal crack at paving joint
G-Street

SY00010a 8/21/2018
West entrance at Lesser Road
G-Street

SY00011a 8/21/2018
Block cracking
H-Street

SY00012a 8/21/2018
Longitudinal and transverse cracking
H-Street

SY00013a 8/21/2018

Block cracking at intersection

H-Street at J-Street

SY00014a 8/21/2018

Block cracking and utility cut

H-Street

SY00015a 8/21/2018

Continuation of loop road to Lot P-1

H-Street

SY00016a 8/21/2018

Loop drive through Lot P-1

H-Street

SY00017a 8/21/2018

Pavement overlay

G-Street

SY00018a 8/21/2018

Side parking area with block cracking

G-Street

SY00019a 8/21/2018
Transverse crack and speed hump
G-Street

SY00020a 8/21/2018
Parallel parking along roadway and parking lot entrance
G-Street

SY00021a 8/21/2018
Utility cut
G-Street

SY00022a 8/21/2018
Alligator cracking and minor rutting
G-Street at D-Street

SY00023a 8/21/2018
Minor rutting
G-Street at Visitor information drive

SY00024a 8/21/2018
Longitudinal crack and alligator cracking
Visitor Information drive

SY00025a 8/21/2018

Block cracking

J-Street

SY00026a 8/21/2018

Utility patching

J-Street at K-Street

SY00027a 8/21/2018

Longitudinal cracking

J-Street

SY00028a 8/21/2018

Utility cut across entrance drive

Lot P-1

SY00029a 8/21/2018

Main drive with block cracking

Lot P-1

SY00030a 8/21/2018

Exit drive with alligator cracking along utility cut

Lot P-1

SY00031a 8/21/2018
Ring Road through parking lot
Lot P-1

SY00032a 8/21/2018
Cracking in parking stall
Lot P-1

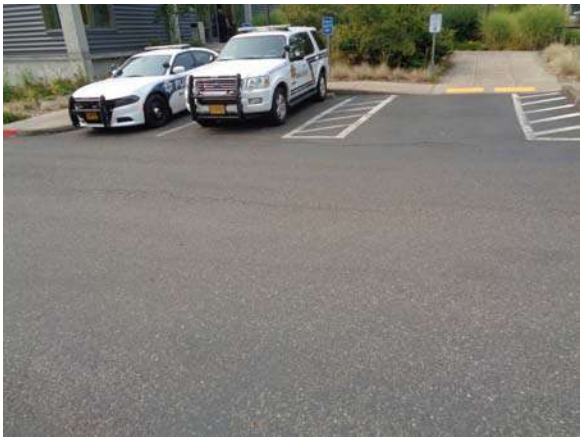
SY00033a 8/21/2018
Block cracking in main drive
Lot P-2

SY00034a 8/21/2018
Block cracking in parking stalls
Lot P-2

SY00035a 8/21/2018
Block cracking in exit drive
Lot P-2

SY00036a 8/21/2018
Block cracking at parking lot entrance
Lot P-3

SY00037a 8/21/2018
Block cracking and transverse cracking
Lot P-3



SY00038a 8/21/2018
Longitudinal cracking in drive lane
Lot P-3

SY00039a 8/21/2018
Alligator cracking in drive lane
Lot P-3

SY00040a 8/21/2018
Drive lane with seal coat in automotive lot
Lot P-4, upper lot

SY00041a 8/21/2018
Parking stalls not seal coated in automotive lot
Lot P-4, upper lot

SY00042a 8/21/2018
Drive lane with seal coat in automotive lot
Lot P-4, upper lot

SY00043a 8/21/2018
Access drive to FMS lot with block cracking and alligator cracking
Lot P-4, lower lot

SY00044a 8/21/2018
Alligator cracking in access drive to FMS lot
Lot P-4, lower lot

SY00045a 8/21/2018
Resurfaced pavement at northeast quadrant
Lot P-5

SY00046a 8/21/2018
Isolated cracking at northeast quadrant
Lot P-5

SY00047a 8/21/2018
Grass growing in previously sealed cracks in southeast quadrant
Lot P-5

SY00048a 8/21/2018
Block cracking in southeast quadrant
Lot P-5

SY00049a 8/21/2018
Block cracking in southeast quadrant
Lot P-5

SY00050a 8/21/2018
Block cracking in south drive lane
Lot P-5, F-Street

SY00051a 8/21/2018
Exit drive with block cracking at E-Street
Lot P-5

SY00052a 8/21/2018
Block cracking at previously sealed northwest quadrant
Lot P-5

SY00053a 8/21/2018
Alligator cracking in drive lane at northwest quadrant
Lot P-5

SY00054a 8/21/2018
Utility cut at northwest quadrant
Lot P-5

SY00055a 8/21/2018
Alligator cracking in exit drive near E-Street
Lot P-5

SY00056a 8/21/2018
Block cracking at previously sealed southwest quadrant
Lot P-5

SY00057a 8/21/2018
Patch in drive lane with alligator cracking at southwest quadrant
Lot P-5

SY00058a 8/21/2018
Block cracking at southwest quadrant
Lot P-5

SY00059a 8/21/2018
Alligator cracking in drive aisle at southwest quadrant
Lot P-5

SY00060a 8/21/2018
Bumps from tree roots at southwest quadrant
Lot P-5

SY00061a 8/21/2018
Alligator cracking in south entrance
Lot P-5

SY00062a 8/21/2018
Block cracking at A-Street
Lot P-7

SY00063a 8/21/2018
Concrete bus parking area at A-Street
Lot P-7

SY00064a 8/21/2018
Pavement at bus stops with utility cuts and block cracking
Lot P-7

SY00065a 8/21/2018
Patching in main drive at C-Street
Lot P-7

SY00066a 8/21/2018
Longitudinal cracking at C-Street
Lot P-7

SY00067a 8/21/2018
Resurfaced pavement at northeast quadrant
Lot P-7

SY00068a 8/21/2018
B-Street striped for parking and walkway
Lot P-7

SY00069a 8/21/2018
Block cracking at northwest quadrant
Lot P-7

SY00070a 8/21/2018
Block cracking and alligator cracking at northwest quadrant
Lot P-7

SY00071a 8/21/2018
Resurfaced pavement at southeast quadrant
Lot P-7

SY00072a 8/21/2018
Block cracking at southwest quadrant
Lot P-7

SY00073a 8/21/2018
Block cracking and alligator cracking at southwest quadrant
Lot P-7

SY00074a 8/21/2018
Alligator cracking and grass growing in cracks at southwest quadrant
Lot P-7

SY00075a 8/21/2018
Parking lot striped for motorcycle classes
Lot P-8

SY00076a 8/21/2018
Block cracking and grass growing in cracks
Lot P-8

SY00077a 8/21/2018
Block cracking and grass growing in cracks
Lot P-8

SY00078a 8/21/2018
Large patch at north entrance
Lot P-8

SY00079a 8/21/2018
Large patch at south entrance
Lot P-8

SY00080a 8/21/2018
Block cracking and alligator cracking
Lot P-9

SY00081a 8/21/2018
Alligator cracking and developing potholes
Lot P-9

SY00082a 8/21/2018
Block cracking and grass growing in cracks
Lot P-9

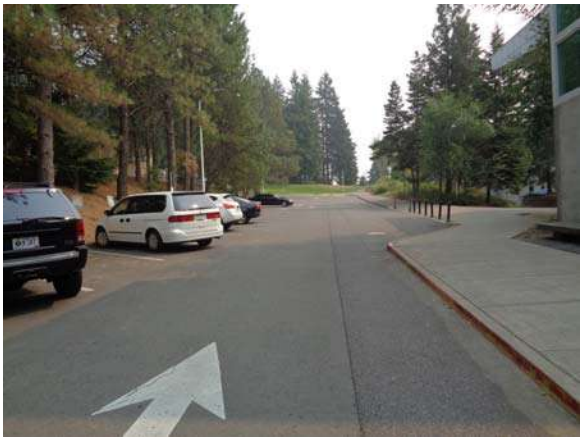
SY00083a 8/21/2018
Potholes in entrance drive
Lot P-9

SY00084a 8/21/2018
Longitudinal cracking at paving joints and grass growing in cracks
Lot P-9

SY00085a 8/21/2018

Alligator cracking

Lot P-9



SY00086a 8/21/2018

Utility cut at K-Street east of Bookstore

Lot P-9

SY00087a 8/21/2018

K-Street south side of parking lot

Lot P-9

SY00088a 8/21/2018

General view of asphalt pavement that was recently sealed and striped

Lot P-10

SY00089a 8/21/2018

Drive lane around parking island

Lot P-10

SY00090a 8/21/2018

L-Street, north entrance

Lot P-10

SY00091a 8/21/2018
Recently sealed asphalt pavement
Lot P-11

SY00092a 8/21/2018
Recently sealed asphalt pavement, cracks sealed, and utility cut
Lot P-11

SY00093a 8/21/2018
Motorcycle parking at southwest corner
Lot P-11

SY00094a 8/21/2018
Entrance from J-Street
Lot P-11

SY00095a 8/21/2018
Perimeter drive with block cracking sealed
Lot P-12

SY00096a 8/21/2018
Utility cut sealed
Lot P-12

SY00097a 8/21/2018
Block cracking sealed
Lot P-12

SY00098a 8/21/2018
New cracks developing in perimeter drive
Lot P-12

SY00099a 8/21/2018
Block cracking, sealed
Lot P-12

SY00100a 8/21/2018
Utility patch in Health Technology parking
Lot P-12

SY00101a 8/21/2018
South entrance drive with surface raveling
Lot P-13

SY00102a 8/21/2018
Block cracking
Lot P-13

SY00103a 8/21/2018
Block cracking with grass growing in cracks
Lot P-13

SY00104a 8/21/2018
Block cracking, rough surface, and pothole
Lot P-13

SY00105a 8/21/2018
Block cracking, some sealed
Lot P-13

SY00106a 8/21/2018
Minor block cracking
Lot P-14

SY00107a 8/21/2018
Pothole with temporary patch
Lot P-14

SY00108a 8/21/2018
Transverse cracking
Lot P-14

SY00109a 8/21/2018
Entrance from H-Street with surface raveling
Lot P-14

SY00110a 8/21/2018
Concrete steps from Lot P-14
Lot P-13

SY00111a 8/21/2018
Concrete walkway through parking lot
Lot P-13

SY00112a 8/21/2018
Concrete plaza and steps
Between C-Street and D-Street

SY00113a 8/21/2018
Concrete plaza and steps and sidewalks between parking lots
Between C-Street and D-Street

SY00114a 8/21/2018
Concrete sidewalk with deteriorating joints
West of Lot P-5

SY00115a 8/21/2018
Concrete and brick paver plaza
East side of Library

SY00116a 8/21/2018
Previously patched concrete sidewalk
South side of Library

SY00117a 8/21/2018
Cracked concrete sidewalk with noncompliant curb cut
North of TriMet bus stop

SY00118a 8/21/2018
Cracked and faulted concrete sidewalk
East of Library

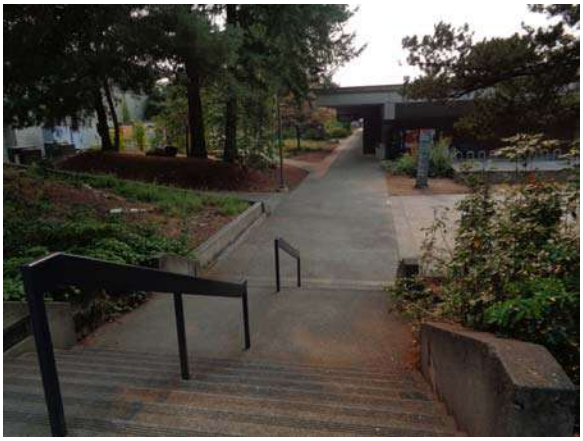
SY00119a 8/21/2018
Gravel path to wooded area
East of Library

SY00120a 8/21/2018
Cracked sidewalk with previous repairs
East of Performing Arts Center

SY00121a 8/21/2018

Faulted joint in concrete sidewalk

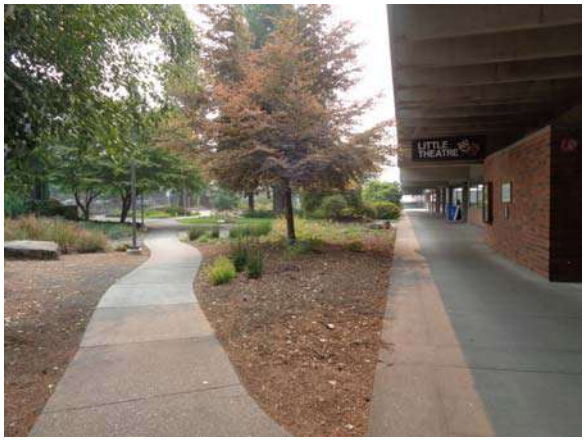
West side of K-Street



SY00122a 8/21/2018

Concrete walkways through campus core and concrete steps

South of Bookstore, looking west



SY00123a 8/21/2018

Concrete sidewalks through campus core

South of Communication Technology building

SY00124a 8/21/2018

Concrete paver plaza

West of Performing Arts Center

SY00125a 8/21/2018

Uneven concrete pavers and debris between pavers

West of Performing Arts Center

SY00126a 8/21/2018

Concrete walkways through campus core

East of College Center building

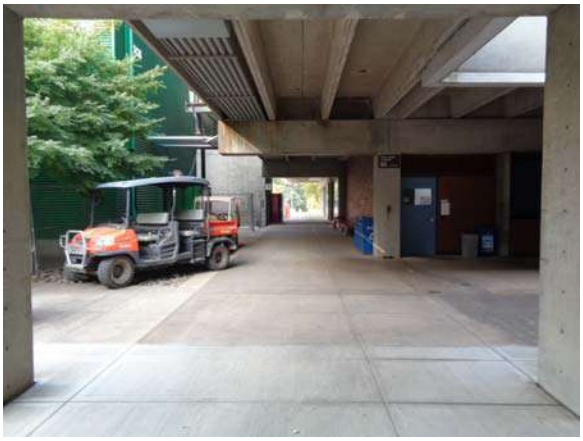
SY00127a 8/21/2018
Concrete walkway from parking lots
South of Library

SY00128a 8/21/2018
Elevated walkway between buildings
West side of Technology Classroom Building

SY00129a 8/21/2018
Concrete paver and gravel gathering area
West side of Technology Classroom Building

SY00130a 8/21/2018
Concrete walkway between buildings, faulting at joints, cracked slab
East side of Social Sciences building

SY00131a 8/21/2018
Plaza access drive with asphalt pavement
North side of College Center



SY00132a 8/21/2018
Concrete walkways between buildings at lower level
North of Automotive Metals building

SY00133a 8/21/2018

New concrete walkway

West of Social Sciences building

SY00134a 8/21/2018

Pole-mounted LED parking lot lights

Lot P-5

SY00135a 8/21/2018

LED light fixture

Lot P-5

SY00136a 8/21/2018

Pole-mounted LED parking lot lights

Lot P-3

SY00137a 8/21/2018

Pole-mounted LED parking lot lights

Lot P-7

SY00138a 8/21/2018

Pole-mounted LED parking lot lights

Lot P-9

SY00139a 8/21/2018

Pole-mounted LED parking lot light

Lot P-2

SY00140a 8/21/2018

Bollard light at walkway

North side of D-Street

SY00141a 8/21/2018

LED walkway light

East of Performing Arts Center

SY00142a 8/21/2018

LED walkway light

North of Performing Arts Center

SY00143a 8/21/2018

LED walkway light

South of Health Technology building

SY00144a 8/21/2018

Older walkway light with LED bulb

West of Health Technology building

SY00145a 8/21/2018
Sidewalk from main entrance with curb cut with noncompliant slopes
SW 49th Avenue at G-Street

SY00146a 8/21/2018
Crosswalk with noncompliant tactile warnings
SW 49th Avenue at G-Street

SY00147a 8/21/2018
Sloped sidewalk lacking handrails
A-Street at G-Street

SY00148a 8/21/2018
Noncompliant curb cut
A-Street at Lot P-8 entrance

SY00149a 8/21/2018
Sloping sidewalks in walking plaza
Between C-Street and D-Street

SY00150a 8/21/2018
Nongraspable handrails and no side handrails
Lot P-9

SY00151a 8/21/2018
No clear path of travel from accessible parking
K-Street at Bookstore

SY00152a 8/21/2018
No curb cuts at service drive
H-Street at athletic fields

SY00153a 8/21/2018
Crosswalk without curb cuts
H-Street at J-Street

SY00154a 8/21/2018
Compliant curb cut in foreground
H-Street at Plaza Access Road

SY00155a 8/21/2018
Nongraspable handrails and no side handrails
Lot P-5 to Lot P-4

SY00156a 8/21/2018
Crosswalk without curb cuts
Between C-Street and D-Street

SY00157a 8/21/2018
Steps with partially compliant handrails
South of Technology Classroom building

SY00158a 8/21/2018
PCC Shuttle stop has level access with tactile warnings
East of Technology Classroom building

SY00159a 8/21/2018
Walkway through parking lot
B-Street in Lot P-7

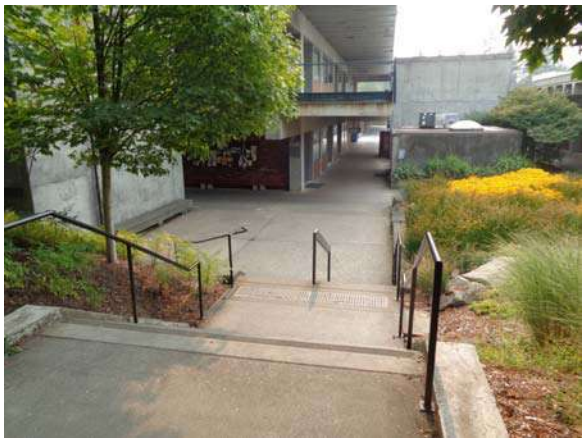
SY00160a 8/21/2018
Cross-slope at sidewalk for TriMet bus stop
East of Library

SY00161a 8/21/2018
Plaza access ramp lacking handrails
West of Performing Arts Center

SY00162a 8/21/2018
Handrails at plaza steps
West of Performing Arts Center

SY00163a 8/21/2018
Exterior stairs with nongraspable handrails
Northeast of College Center

SY00164a 8/21/2018
Covered walkway with sloped sidewalk lacking handrails
Northwest of Library



SY00165a 8/21/2018
Partially compliant handrails
North of Science and Technology building

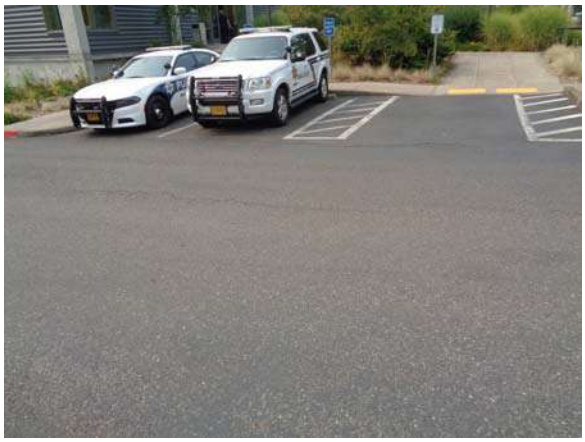
SY00166a 8/21/2018
Nongraspable handrails and no side handrails
North of Communications Technology building

SY00167a 8/21/2018
Sloped sidewalk with handrail on one side only
Plaza Access Drive

SY00168a 8/21/2018
Sloped sidewalk lacking handrails
West of College Center building

SY00169a 8/21/2018
Nongraspable handrails and no side handrails
North of Health Technology building

SY00170a 8/21/2018
Accessible parking signs too low and missing side aisles
Lot P-5



SY00171a 8/21/2018
Temporary disabled parking with side aisle not in line with curb cut
Lot P-3

SY00172a 8/21/2018
Accessible parking and no clear path of travel
Lot P-4

SY00173a 8/21/2018
Accessible parking
Lot P-4, lower lot

SY00174a 8/21/2018
Accessible parking, raised island restricts travel, and no clear path of travel
Lot P-7

SY00175a 8/21/2018

Accessible parking, no curb cuts at side aisles, and signs too low

Lot P-2

SY00176a 8/21/2018

Accessible parking, no clear path of travel, and signs too low

Lot P-9 (K-Street)

SY00177a 8/21/2018

Parallel accessible parking

Lot P-12 at Health Technology

SY00178a 8/21/2018

Accessible parking, no curb cuts at side aisles, and signs too low

Lot P-12 at Health Technology

SY00179a 8/21/2018

Curb inlet

F-Street

SY00180a 8/21/2018

Rain garden

South of Lot P-5

SY00181a 8/21/2018
Stormwater detention facility with terraced basins
South of Lot P-5

SY00182a 8/21/2018
Drop inlets
Lot P-4 (upper)

SY00183a 8/21/2018
Drop inlet
Lot P-4 (lower)

SY00184a 8/21/2018
Curb inlet
Lot P-8

SY00185a 8/21/2018
Old stormwater detention structure
South of G-Street

SY00186a 8/21/2018
Utility cuts for new water main loop and water vault
G-Street at K-Street

SY00187a 8/21/2018

Bioswale

West of H-Street, Ring Road connector

SY00188a 8/21/2018

Parking forest near entry island

Lot P-10

PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Social Science

Asset 1110

Inspected August 23, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

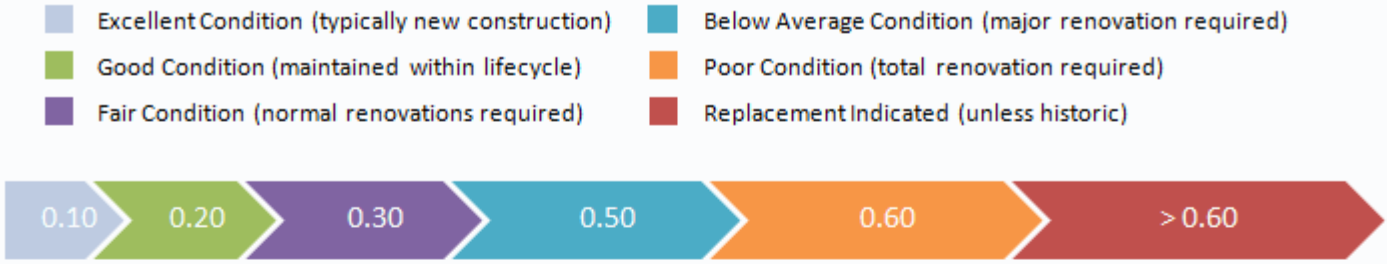
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

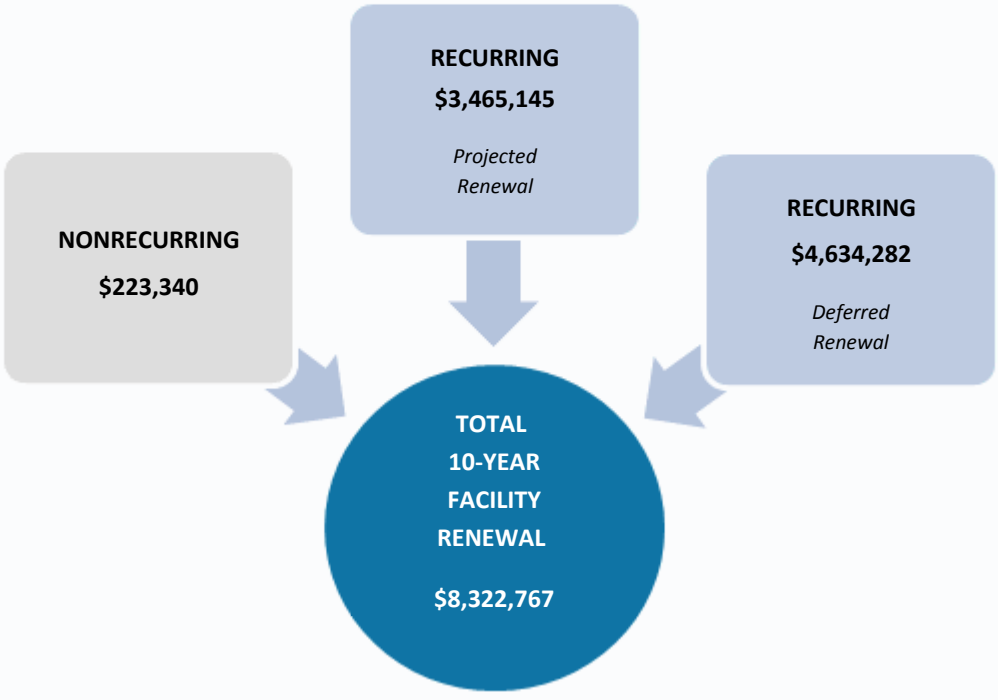
ASSET CODE	1110		
ASSET NAME	SOCIAL SCIENCE	**CURRENT REPLACEMENT VALUE**	$24,871,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.33
YEAR BUILT	1968	**FACILITY CONDITION INDEX**	0.19
GSF	61,899	**10-YEAR $/SF**	134.46
INSPECTION DATE	08/23/2018		

FCNI Scale

The FCNI for this asset is **0.33**



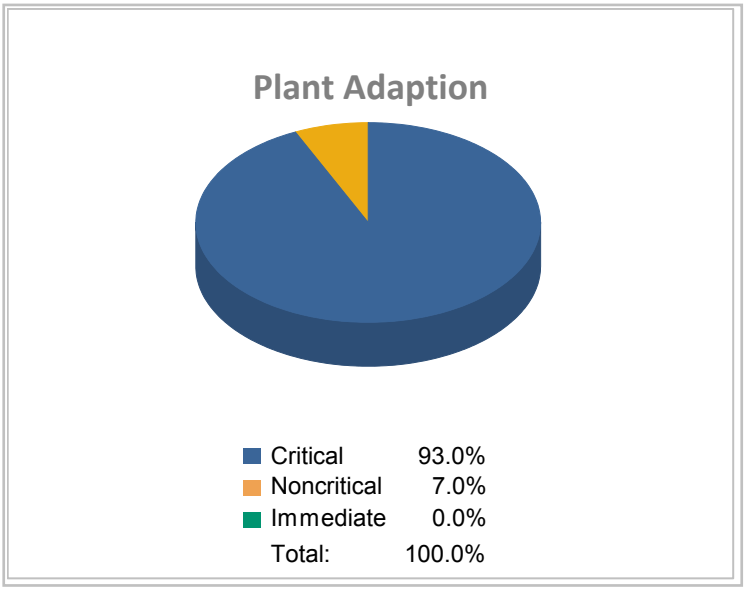
Total Facility Renewal Costs



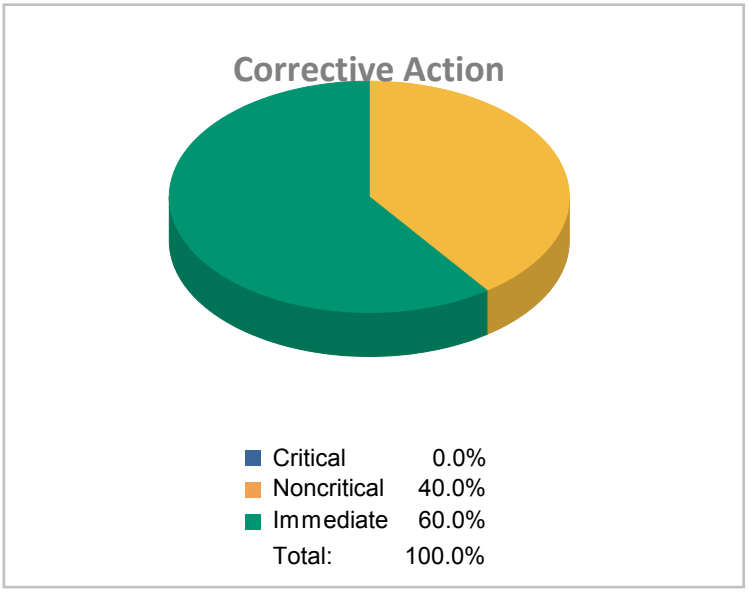
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$195,694**
3 - Noncritical	**$14,713**

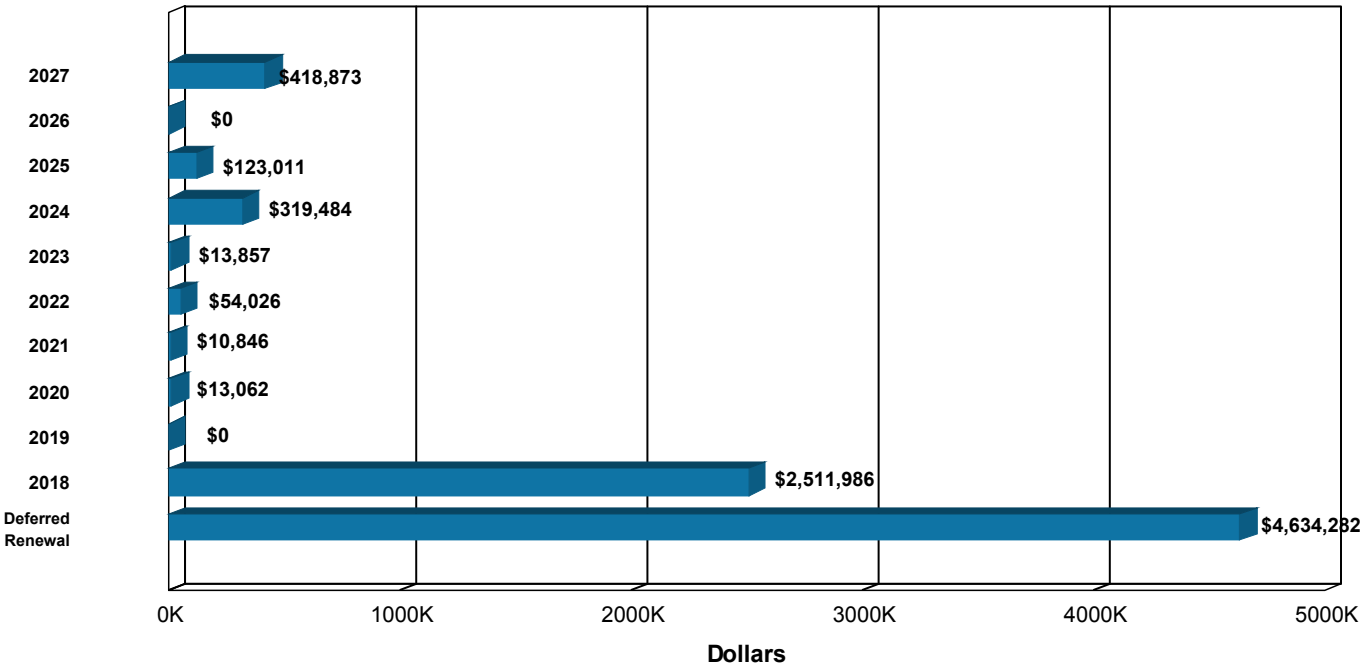


CORRECTIVE ACTION	
1 - Immediate	**$7,759**
2 - Critical	**$0**
3 - Noncritical	**$5,175**

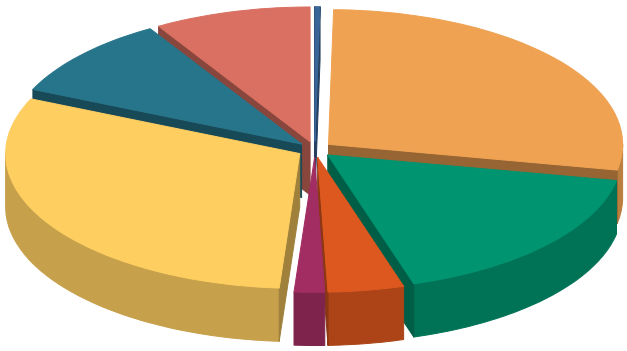


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$23,225	0%
Electrical	$2,322,163	28%
Exterior	$1,430,430	17%
Fire/Life Safety	$332,958	4%
Health	$141,884	2%
HVAC	$2,540,875	31%
Interiors	$812,023	10%
Plumbing	$719,210	9%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$8,322,767**	

ASSET SUMMARY

The Social Science Building is one of six early academic buildings built in the Brutalist style on the Portland Community College, Sylvania campus. This two-story classroom and office building has a penthouse, a flat roof, and brick, wood, and glass exterior walls. On the ground level are four single-room structures referred to as bunkers, two each on the north and west of the building. These are used as additional office space. The roofs and intermediate floor structures overhang the exterior walls creating outdoor covered walks. The Social Sciences building encloses 61,899 gross square feet of floor space and houses classrooms, offices, and support facilities for a variety of programs at the college.

Information for this report was gathered during a site visit conducted on August 23, 2018.

Site

The building is located on a sloping site south of the Campus Center and west of the Science Technology building. Pedestrian access is provided by concrete sidewalks on all sides of the building and parking is available in shared campus lots. The landscaping is minimal but appropriate and in good condition. No site upgrades should be necessary within the report scope.

Exterior Structure

The roof on both the main building and the bunkers is a silver-coated, asphaltic, multi-ply membrane which appears to be beyond its normal lifecycle. It is recommended that the membrane be replaced in the next few years. The skylights on the bunkers are newer and should outlast the scope of this report. The exterior walls are cast concrete structural elements with infill of wood, brick and steel-framed glazing. The brick is in good condition. The wood material also appears to be in good condition but should be refinished within the next ten years. The steel frames for the single-glazed windows are in good condition but the glass is beyond its normal useful service life and should be replaced. The concrete is in very good condition but should be cleaned and any joints cleaned and recaulked where needed. The exterior doors are hollow-metal units, all of which are at or beyond their normal lifecycle and recommended for replacement.

Interior Finishes/Systems

Floor finishes include carpet, sealed concrete, and ceramic tile. All of these finishes should be replaced or renewed within the next ten years. The interior walls are painted, clear finished, or finished with ceramic tile. The ceramic tile is in good condition, but the painted surfaces, including the clear finished wood interior of the exterior wood wall material, should be refinished within the ten-year scope of this report. The ceilings are suspended acoustical tile systems and painted hard surfaces, all of which are in good condition. Break room and workroom casework varies in age and condition. The newer installations are in good condition and should outlast the scope of this report. However, the older

casework should be replaced. The interior doors and hardware are in good condition and no work is recommended at this time.

Accessibility

This building was built before current accessibility legislation but has been upgraded significantly to include accessible features such as grade-level access to the main entrances with powered door openers, generally accessible door hardware and signage, accessible restrooms, and accessible drinking fountains. However, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The dual-level drinking fountain, which is otherwise compliant, should have cane guard or alcove walls added. Also, the configuration of the exterior single-level drinking fountain is a barrier to accessibility and it should be replaced with a dual-level unit flanked by cane guards.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although the stairs have handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile.

The roof access door at the penthouse has knob actuated hardware which is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

Health

There may be asbestos-containing materials (ACMs) on the utility piping. If ACMs are present, they will need to be abated during the next modernization.

Fire/Life Safety

This building has adequate exits, exit stairs, and exit access corridors. The exit pathways are clearly marked and adequately sized. Emergency lighting is provided by select fixtures tied to the emergency power network. This appears to be an adequate application with no recommendations at this time.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

The facility has a Silent Knight modern fire alarm system with the main addressable fire alarm panel in a corridor leading to room E1-1. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage and the

main panel is believed to have been upgraded in 2005 while the devices date to 2000. Based on industry standards, it will reach the end of its normal service life within the scope of this report. A Wheelock mass notification panel is inventoried in this report for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The system appears to provide adequate coverage and is in good condition with no recommendations.

HVAC

The facility is on the campus hot and chilled water loops for heating and cooling. Pumps circulate both the heating and cooling media. Based on their estimated age, the pumps should continue to serve the facility beyond the scope of this report.

One main indoor air handling unit (AHU) provides tempered air and contains hot and chilled water coils as well as a matching return fan. Distribution equipment consists of metal ductwork and the system is controlled by a digital application which is believed to have been upgraded in 2015. Two fan coil units (FCUs) serve the exterior restrooms and are also believed to be original. The HVAC system appears to be in adequate condition, but based on age replacement for all remaining original equipment should be scheduled. Additionally, a partial control upgrade may need to be considered.

The facility bunkers have rooftop package units for heating and are charged with DX refrigerant for cooling. Most of the rooftop package units were recently replaced and have substantial remaining service life. One unit dates to 2000 and will reach the end of its normal lifecycle at the end of the next ten years. It may need to be replaced on a low priority basis. The facility also has two split systems in the IT rooms. The equipment is charged with DX refrigerant for cooling and have substantial remaining service life.

Facility exhaust is provided by utility set fans serving the restrooms and general exhaust needs. They are believed to be original and have reached lifecycle depletion.

Electrical

Power is supplied to the facility is via underground utilities at 480/277 or 120/208 volts. Two main exterior switchboards receive the power for distribution. These units were installed in 2004 and are in good condition. Additionally, power is supplied to the penthouse where two original switchboards are energized for distribution throughout the facility. These original switchboards are showing signs of age and should be replaced.

The electrical distribution system consists of panelboards that distribute power at 480/277 or 120/208 volts and a motor control center (MCC). Circuits are energized for mechanical, lighting, and general purpose loads. The distribution system appears to be original and, based on age, is nearing the end of its service life. The MCC has already reached lifecycle depletion and should be considered for replacement.

The interior lighting consists of surface-mount, lay-in, and suspended fixtures equipped with parabolic, acrylic, or no lenses and lamped with T8 fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. However, the original lighting in the penthouse has reached the end of its normal lifecycle and it is estimated that some of the 2004 lighting will reach the end of its lifecycle with the scope of this report. Upgrade is recommended.

The exterior lighting consists of eave-mounted fixtures with T8 fluorescent bulbs, wall-mounted HID fixtures, and recessed wall-mounted fixtures. Additional lighting is provided by the surrounding site. Although the inspection was performed during daylight, the lighting scheme appears to provide adequate coverage. However, some of the exterior lighting should be considered for upgrade based on age and lifecycle depletion.

Emergency power is provided by a district source. A Zenith automatic transfer switch (ATS) provides the power for distribution. Installed in 2004, it is in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve the supply and return fans. The VFDs are in adequate condition and estimated to date to 2004. Based on age, replacement should be scheduled in the next ten years.

Plumbing

Domestic water is supplied through a copper or galvanized piping network. Drain piping is cast-iron with hub-and-spigot connections. The piping systems, where they could be viewed, appear to be original and in adequate condition. Based on age, replacement of the domestic water system should be anticipated within the scope of this report. No domestic hot water generation equipment was observed in the facility. Domestic hot water may be supplied from the heat plant and this should be an adequate application.

It was reported that the two restrooms have sump pumps on the first floor in the event of a water mishap. The pumps are believed to date to 2010 and, based on age, should outlast the scope of this report.

Plumbing fixtures include water closets, urinals, lavatories, kitchen sinks, and utility sinks. The older water closets, lavatories, and urinals are beyond their useful lifecycles and should be replaced. While the newer kitchen sinks should outlast the scope of this report, the older kitchen sinks will need to be replaced in the next ten years. The remaining fixtures are in good condition and should serve another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Project Manager

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Date of Inspection

August 23, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- **Plant Adaption**
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- **Corrective Action**
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- **Immediate**

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- **Critical**

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	7,759	753	14,713	0	0	0	0	0	0	0	0	0	0	0	$23,225
EXTERIOR	0	0	5,175	1,371,229	0	0	0	0	54,026	0	0	0	0	0	$1,430,430
INTERIOR	0	0	0	370,101	0	0	0	0	0	0	0	23,049	0	418,873	$812,023
PLUMBING	0	0	0	10,411	708,799	0	0	0	0	0	0	0	0	0	$719,210
HVAC	0	0	0	2,440,914	0	0	0	0	0	0	0	99,961	0	0	$2,540,875
FIRE/LIFE SAFETY	0	53,057	0	0	266,044	0	0	0	0	13,857	0	0	0	0	$332,958
ELECTRICAL	0	0	0	441,627	1,537,144	0	13,062	10,846	0	0	319,484	0	0	0	$2,322,163
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	141,884	0	0	0	0	0	0	0	0	0	0	0	0	$141,884
SUBTOTAL	$7,759	$195,694	$19,887	$4,634,282	$2,511,986	$0	$13,062	$10,846	$54,026	$13,857	$319,484	$123,011	$0	$418,873	$8,322,767
TOTAL NONRECURRING PROJECT NEEDS			$223,340	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$8,099,427	

CURRENT REPLACEMENT VALUE	$24,871,000
FACILITY CONDITION NEEDS INDEX	0.33
FACILITY CONDITION INDEX	0.19

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
61,899	$8,322,767	$134.46

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$23,225	$0	$23,225
EXTERIOR	$5,175	$1,425,255	$1,430,430
INTERIOR	$0	$812,023	$812,023
PLUMBING	$0	$719,210	$719,210
HVAC	$0	$2,540,875	$2,540,875
FIRE/LIFE SAFETY	$53,057	$279,901	$332,958
ELECTRICAL	$0	$2,322,163	$2,322,163
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$141,884	$0	$141,884
TOTALS	**$223,340**	**$8,099,427**	**$8,322,767**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1110AC02	EXTERIOR STAIR UPGRADES	C2010	1	Corrective Action	7,759
1110FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	53,057
1110AC03	ROOF ACCESS DOORS HARDWARE UPGRADE	C1010	2	Plant Adaption	753
1110HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	F2020	2	Plant Adaption	141,884
1110ES01	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	5,175
1110AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	14,713
				TOTAL	**$223,340**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1110	EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				B2010	Deferred Renewal	5,528
1110	WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				B2020	Deferred Renewal	588,506
1110	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			PENTHOUSE	B2030	Deferred Renewal	4,013
1110	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			B2030	Deferred Renewal	40,131
1110	DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			B2030	Deferred Renewal	64,210
1110	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			PENTHOUSE	B2030	Deferred Renewal	1,893
1110	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUNKERS			B3010	Deferred Renewal	18,817
1110	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				B3010	Deferred Renewal	648,132
1110	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL			C1030	Deferred Renewal	67,306
1110	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	153,477
1110	IW08	WALL FINISH - WOOD PANEL, STANDARD				C3010	Deferred Renewal	71,731
1110	IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				C3020	Deferred Renewal	77,587
1110	FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG			2ND FLR	D2010	Deferred Renewal	2,702
1110	FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL		2ND FLR	D2010	Deferred Renewal	1,545
1110	FX10	PLUMBING FIXTURE - URINAL			2ND FLOOR	D2010	Deferred Renewal	1,079
1110	FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS			2ND FLOOR	D2010	Deferred Renewal	5,085

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1110	AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU-1	0000000989	J1-2	D3040	Deferred Renewal	8,882
1110	AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU-2	0000000977	J1-1	D3040	Deferred Renewal	8,882
1110	AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-1	0000000420	PENTHOUSE	D3040	Deferred Renewal	175,314
1110	FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	EF-1	0000000431	PENTHOUSE	D3040	Deferred Renewal	29,431
1110	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-2	0000000439	PENTHOUSE	D3040	Deferred Renewal	5,466
1110	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	SF-5	0000000441	PENTHOUSE	D3040	Deferred Renewal	5,466
1110	FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	SF-6	0000000440	PENTHOUSE	D3040	Deferred Renewal	5,466
1110	HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				D3040	Deferred Renewal	2,202,007
1110	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-W	0000000427	PENTHOUSE	D5010	Deferred Renewal	304,869
1110	SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	SWBD 4W	0000000421	PENTHOUSE	D5010	Deferred Renewal	33,351
1110	SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SWBD 2W	0000000423	PENTHOUSE	D5010	Deferred Renewal	47,259
1110	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	ORIGINAL			D5020	Deferred Renewal	56,148
1110	PS02	SUPPLY PIPING SYSTEM - CLASSROOM				D2020	2018	708,799
1110	FA01	FIRE ALARM SYSTEM - DEVICES			E1-1	D4030	2018	266,044
1110	SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				D5010	2018	1,537,144
1110	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	EF-1	0000000432	PENTHOUSE	D5010	2020	6,433
1110	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			D5020	2020	5,086

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1110	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			D5020	2020	1,543
1110	VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	SF-1	0000000422	PENTHOUSE	D5010	2021	10,846
1110	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2022	30,286
1110	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2022	23,740
1110	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		E1-1	D4030	2023	13,857
1110	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	2004 INSTALL			D5020	2024	319,484
1110	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			C3020	2025	23,049
1110	HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	SS-2	0000000981	ROOF	D3050	2025	10,602
1110	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2025	58,353
1110	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2025	31,006
1110	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2027	418,873
							TOTAL	**$8,099,427**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1110AC02	EXTERIOR STAIR UPGRADES	1	$7,759
6	1110ES01	EXTERIOR WALL FINISH RENEWAL	3	$5,175
		TOTAL FOR CORRECTIVE ACTION		**$12,934**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
2	1110FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$53,057
3	1110HE01	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	2	$141,884
4	1110AC03	ROOF ACCESS DOORS HARDWARE UPGRADE	2	$753
5	1110AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$14,713
		TOTAL FOR PLANT ADAPTION		**$210,406**
		GRAND TOTAL:		**$223,340**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	1110AC02	1	Corrective Action	EXTERIOR STAIR UPGRADES	$7,759
4	1110AC03	2	Plant Adaption	ROOF ACCESS DOORS HARDWARE UPGRADE	$753
5	1110AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$14,713
				TOTAL FOR ACCESSIBILITY	**$23,225**
6	1110ES01	3	Corrective Action	EXTERIOR WALL FINISH RENEWAL	$5,175
				TOTAL FOR EXTERIOR	**$5,175**
2	1110FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$53,057
				TOTAL FOR FIRE/LIFE SAFETY	**$53,057**
3	1110HE01	2	Plant Adaption	ASBESTOS ABATEMENT - MECHANICAL SYSTEMS	$141,884
				TOTAL FOR HEALTH	**$141,884**
				GRAND TOTAL:	**$223,340**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

EXTERIOR STAIR UPGRADES

Project Number:	1110AC02	**Category Code:**	AC2A
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	ACCESSIBILITY
Project Class:	Corrective Action	**Component:**	BUILDING ENTRY
Date Basis:	8/23/2018	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue beyond the top and bottom riser. Although the stairs have handrails on both sides, these handrails are a nonconforming rectangular shape and should be replaced with handrails of an approved profile.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	4	$729	$2,918	$663	$2,653	$5,570
Base Material/Labor Costs				**$2,918**		**$2,653**	
Indexed Material/Labor Costs				**$2,900**		**$2,674**	**$5,574**
Construction Mark Up at 20.0%							**$1,115**
Original Construction Cost							**$6,689**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$6,689**
Professional Fees at 16.0%							**$1,070**
TOTAL PROJECT COST							**$7,759**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1110FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/30/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	48	$304	$14,592	$488	$23,424	$38,016
Base Material/Labor Costs				**$14,592**		**$23,424**	
Indexed Material/Labor Costs				**$14,504**		**$23,611**	**$38,116**
Construction Mark Up at 20.0%							**$7,623**
Original Construction Cost							**$45,739**
Date of Original Estimate: 9/30/2018						**Inflation**	**$0**
Current Year Construction Cost							**$45,739**
Professional Fees at 16.0%							**$7,318**
TOTAL PROJECT COST							**$53,057**

All costs shown as Present Value

ASBESTOS ABATEMENT - MECHANICAL SYSTEMS

Project Number:	1110HE01	**Category Code:** HE6B	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	11/28/2018	**Element:**	MECHANICAL ASBESTOS

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Floor-wide: Floor(s) 1,2,P
OSHA	29 CFR 1910.1001, 1926.1101		

Description

There may be asbestos existent on utility piping. Prior to future renovation of these systems, this asbestos, if present, will have to be properly removed from the utility networks.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HVAC system - abate asbestos from utility piping	SF	61,899	$0.23	$14,237	$0.59	$36,520	$50,757
Plumbing system - abate asbestos from supply piping network	SF	61,899	$0.23	$14,237	$0.59	$36,520	$50,757
Base Material/Labor Costs				**$28,474**		**$73,041**	
Indexed Material/Labor Costs				**$28,303**		**$73,625**	**$101,928**
Construction Mark Up at 20.0%							**$20,386**
Original Construction Cost							**$122,313**
Date of Original Estimate: 11/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$122,313**
Professional Fees at 16.0%							**$19,570**
TOTAL PROJECT COST							**$141,884**

All costs shown as Present Value

ROOF ACCESS DOORS HARDWARE UPGRADE

Project Number:	1110AC03
Priority Sequence:	4
Priority Class:	Critical
Project Class:	Plant Adaption
Date Basis:	12/11/2018

Category Code: AC3C

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	Not Applicable	Floor-wide: Floor(s) P

Description

The roof access door at the penthouse has knob actuated hardware which is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, commercial-grade door hardware	EA	1	$387	$387	$155	$155	$542
Base Material/Labor Costs				**$387**		**$155**	
Indexed Material/Labor Costs				**$385**		**$156**	**$541**
Construction Mark Up at 20.0%							**$108**
Original Construction Cost							**$649**
Date of Original Estimate: 12/11/2018						**Inflation**	**$0**
Current Year Construction Cost							**$649**
Professional Fees at 16.0%							**$104**
TOTAL PROJECT COST							**$753**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	1110AC01	**Category Code:** AC3F	
Priority Sequence:	5		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	8/23/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1,2

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountains is a barrier to accessibility. All single-level drinking fountains should be replaced with dual-level units. Additionally, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The single level drinking fountains, and the dual-level drinking fountain which is otherwise compliant, should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	2	$932	$1,865	$3,321	$6,643	$8,508
			Base Material/Labor Costs	**$3,414**		**$7,119**	
			Indexed Material/Labor Costs	**$3,393**		**$7,176**	**$10,569**
					Construction Mark Up at 20.0%		**$2,114**
					Original Construction Cost		**$12,683**
Date of Original Estimate: 8/23/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$12,683**
					Professional Fees at 16.0%		**$2,029**
					TOTAL PROJECT COST		**$14,713**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	1110ES01	**Category Code:** ES2B	
Priority Sequence:	6		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	8/23/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The exterior wall systems include wood plank finishes. The wood appears to be in generally good condition but should be repainted within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior painting or staining to include surface preparation, priming, and two coats	SF	1,440	$0.64	$922	$1.93	$2,779	$3,701
Base Material/Labor Costs				**$922**		**$2,779**	
Indexed Material/Labor Costs				**$916**		**$2,801**	**$3,718**
Construction Mark Up at 20.0%							**$744**
Original Construction Cost							**$4,461**
Date of Original Estimate: 8/23/2018						**Inflation**	**$0**
Current Year Construction Cost							**$4,461**
Professional Fees at 16.0%							**$714**
TOTAL PROJECT COST							**$5,175**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW06	WALL, EXTERIOR, SIDING, WOOD BOARD, STANDARD				1,440	SF	1.12	$19,811	1968	30	30	2028
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				2,400	SF	1.12	$5,528	1968	30	19	DR
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM				2,400	SF	1.12	$588,506	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			20	LEAF	1.00	$40,131	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			32	LEAF	1.00	$64,210	1968	40	9	DR
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL			PENTHOUSE	2	LEAF	1.00	$4,013	1968	40	9	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				32	EA	1.00	$30,286	2010	12		2022
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR			PENTHOUSE	2	EA	1.00	$1,893	1968	12	37	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				20	EA	1.00	$23,740	2010	12		2022
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				31,000	SF	1.00	$648,132	1968	30	19	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUNKERS			900	SF	1.00	$18,817	1968	30	19	DR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME	BUNKERS			70	SF	1.00	$20,032	2016	35		2051
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				43	LEAF	1.00	$95,092	2015	60		2075
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				2	LEAF	1.00	$7,337	2015	60		2075
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			43	EA	1.00	$32,375	2015	35		2050

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			2	EA	1.00	$1,506	2015	35		2050
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL			120	LF	1.00	$67,306	1968	30	19	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	2015			28	LF	1.00	$15,705	2015	30		2045
IW01	WALL FINISH - APPLIED, STANDARD				54,990	SF	1.00	$153,477	1968	12	37	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				3,440	SF	1.00	$139,326	1968	60		2028
IW08	WALL FINISH - WOOD PANEL, STANDARD				3,440	SF	1.00	$71,731	1968	40	9	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				35,160	SF	1.00	$418,873	2015	12		2027
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD				2,200	SF	1.00	$77,587	1968	40	9	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE			6,590	SF	1.00	$23,049	2015	10		2025
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	2015 INSTALL			29,230	SF	1.00	$325,335	2015	45		2060
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	1990 INSTALL			12,530	SF	1.00	$139,461	1990	45		2035
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				2,200	SF	1.00	$6,140	2015	24		2039
DF01	DRINKING FOUNTAIN, DUAL-LEVEL	INTERIOR			1	EA	1.00	$2,694	2015	25		2040
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG			2ND FLR	2	EA	1.00	$2,702	1968	35	14	DR
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG			RR TOWERS	24	EA	1.00	$32,428	2000	35		2035

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL		2ND FLR	2	EA	1.00	$1,545	1968	20	29	DR
FX04	PLUMBING FIXTURE - SINK, KITCHEN	2015 INSTALL			1	EA	1.00	$773	2015	20		2035
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY			RR TOWERS	2	EA	1.00	$3,329	2000	50		2050
FX10	PLUMBING FIXTURE - URINAL			2ND FLOOR	1	EA	1.00	$1,079	1968	35	14	DR
FX10	PLUMBING FIXTURE - URINAL			RR TOWERS	18	EA	1.00	$19,416	2000	35		2035
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS			2ND FLOOR	3	EA	1.00	$5,085	1968	35	14	DR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS			RR TOWERS	20	EA	1.00	$33,899	2000	35		2035
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				61,899	SF	1.00	$708,799	1968	50		2018
PD02	DRAIN PIPING SYSTEM - CLASSROOM				61,899	SF	1.00	$1,063,444	1968	60		2028
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SUMP PUMP	0000000991	J1-1	1	EA	1.00	$710	2010	20		2030
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SUMP PUMP	0000000978	J1-2	1	EA	1.00	$710	2010	20		2030
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FCU-2	0000000437	PENTHOUSE	1	TON	1.50	$3,435	2014	25		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FCU-1	0000005736	PENTHOUSE	1	TON	1.50	$3,435	2015	25		2040
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)		0000005738	IDF-1	1	TON	1.00	$2,970	2014	30		2044
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)		0000005739	BDF-1	1	TON	1.00	$2,970	2015	30		2045

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU-1	0000000989	J1-2	1	HP	1.00	$8,882	1968	35	14	DR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU-2	0000000977	J1-1	1	HP	1.00	$8,882	1968	35	14	DR
AH11	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-1	0000000420	PENTHOUSE	30	HP	1.00	$175,314	1968	35	14	DR
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	EF-1	0000000431	PENTHOUSE	15	HP	1.00	$29,431	1968	35	14	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-2	0000000439	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	SF-5	0000000441	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	SF-6	0000000440	PENTHOUSE	1	HP	1.00	$5,466	1968	40	9	DR
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				61,899	SF	1.00	$2,202,007	1968	45	4	DR
PH01	PUMP - ELECTRIC (<=10 HP)	CP-1	0000000418	PENTHOUSE	1	HP	1.00	$1,693	2000	30		2030
PH01	PUMP - ELECTRIC (<=10 HP)	HEATING HT WTR	0000000991	J1-1	1	HP	1.00	$1,693	2000	30		2030
PH01	PUMP - ELECTRIC (<=10 HP)	HEATING HT WTR	0000000978	J1-2	1	HP	1.00	$1,693	2000	30		2030
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	SS-1	0000000982	ROOF	2	TON	1.25	$10,602	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	SS-2	0000000981	ROOF	2	TON	1.25	$10,602	2000	25		2025
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	SS-3	0000000987	ROOF	1	TON	1.50	$6,361	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	SS-4	0000000983	ROOF	3	TON	1.00	$12,722	2014	25		2039

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				61,899	SF	1.00	$209,700	2015	20		2035
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				61,899	SF	1.00	$58,353	2015	10		2025
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				61,899	SF	1.00	$31,006	2015	10		2025
FS01	FIRE SPRINKLER SYSTEM - WET				61,899	SF	1.00	$837,409	1968	80		2048
FA01	FIRE ALARM SYSTEM - DEVICES			E1-1	61,899	SF	1.00	$266,044	2000	18		2018
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		BDF1-1	1	EA	1.00	$2,254	2010	18		2028
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		E1-1	1	EA	1.00	$13,857	2005	18		2023
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-W	0000000427	PENTHOUSE	4	EA	1.00	$304,869	1968	25	24	DR
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				61,899	SF	1.00	$1,537,144	1968	50		2018
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	SWBD 4W	0000000421	PENTHOUSE	400	AMP	1.00	$33,351	1968	40	9	DR
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)		0000000950	SITE	400	AMP	1.00	$33,351	2004	40		2044
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SWBD 2W	0000000423	PENTHOUSE	600	AMP	1.00	$47,259	1968	40	9	DR
SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)		0000000951	SITE	800	AMP	1.00	$58,271	2004	40		2044
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	EF-1	0000000432	PENTHOUSE	15	HP	1.00	$6,433	2004	16		2020
VF07	VARIABLE FREQUENCY DRIVE (25-30 HP)	SF-1	0000000422	PENTHOUSE	30	HP	1.00	$10,846	2004	17		2021

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			55	EA	1.00	$27,970	2014	20		2034
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			10	EA	1.00	$5,086	2000	20		2020
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			2	EA	1.00	$1,543	2000	20		2020
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	ORIGINAL			5,000	SF	1.00	$56,148	1968	20	29	DR
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	2004 INSTALL			28,450	SF	1.00	$319,484	2004	20		2024
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	2016 INSTALL			28,449	SF	1.00	$319,473	2016	20		2036
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				28,449	SF	1.00	$65,335	2016	20		2036
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	GE ZENITH	0000005737	PENTHOUSE	100	AMP	1.00	$5,527	2004	25		2029
								Grand Total:	**$11,665,812**			

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2010	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH		2,400	SF	$5,528	DR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM		2,400	SF	$588,506	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW	20	LEAF	$40,131	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW	32	LEAF	$64,210	DR
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL		2	LEAF	$4,013	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$1,893	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30		31,000	SF	$648,132	DR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30	BUNKERS	900	SF	$18,817	DR
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	ORIGINAL	120	LF	$67,306	DR
C3010	WALL FINISH - APPLIED, STANDARD		54,990	SF	$153,477	DR
C3010	WALL FINISH - WOOD PANEL, STANDARD		3,440	SF	$71,731	DR
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD		2,200	SF	$77,587	DR
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG		2	EA	$2,702	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN	ORIGINAL	2	EA	$1,545	DR
D2010	PLUMBING FIXTURE - URINAL		1	EA	$1,079	DR
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS		3	EA	$5,085	DR
D3040	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	EF-1	15	HP	$29,431	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EF-2	1	HP	$5,466	DR

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	SF-5	1	HP	$5,466	DR
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	SF-6	1	HP	$5,466	DR
D3040	HVAC DISTRIBUTION NETWORKS - CLASSROOM		61,899	SF	$2,202,007	DR
D3040	AIR HANDLING UNIT - INDOOR (27-35 HP)	SF-1	30	HP	$175,314	DR
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU-1	1	HP	$8,882	DR
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HVU-2	1	HP	$8,882	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	SWBD 4W	400	AMP	$33,351	DR
D5010	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	SWBD 2W	600	AMP	$47,259	DR
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-W	4	EA	$304,869	DR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	ORIGINAL	5,000	SF	$56,148	DR
				TOTAL DEFERRED RENEWAL COST	**$4,634,282**	

2018

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM		61,899	SF	$1,537,144	2018
D4030	FIRE ALARM SYSTEM - DEVICES		61,899	SF	$266,044	2018
D2020	SUPPLY PIPING SYSTEM - CLASSROOM		61,899	SF	$708,799	2018
	2018			**PROJECTED COMPONENT REPLACEMENT COST**	**$2,511,986**	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1110 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	10	EA	$5,395	2020
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT	2	EA	$1,637	2020
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	EF-1	15	HP	$6,825	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$13,857	

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (25-30 HP)	SF-1	30	HP	$11,851	2021
	2021	PROJECTED COMPONENT REPLACEMENT COST			$11,851	

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		32	EA	$34,087	2022
B2030	DOOR PANIC HARDWARE, EXTERIOR		20	EA	$26,720	2022
	2022	PROJECTED COMPONENT REPLACEMENT COST			$60,807	

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$16,064	2023
	2023	**PROJECTED COMPONENT REPLACEMENT COST**			**$16,064**	

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	2004 INSTALL	28,450	SF	$381,481	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$381,481**	

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	SEALED CONCRETE	6,590	SF	$28,348	2025
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		61,899	SF	$38,134	2025
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		61,899	SF	$71,767	2025
D3050	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	SS-2	2	TON	$13,039	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$151,288**	

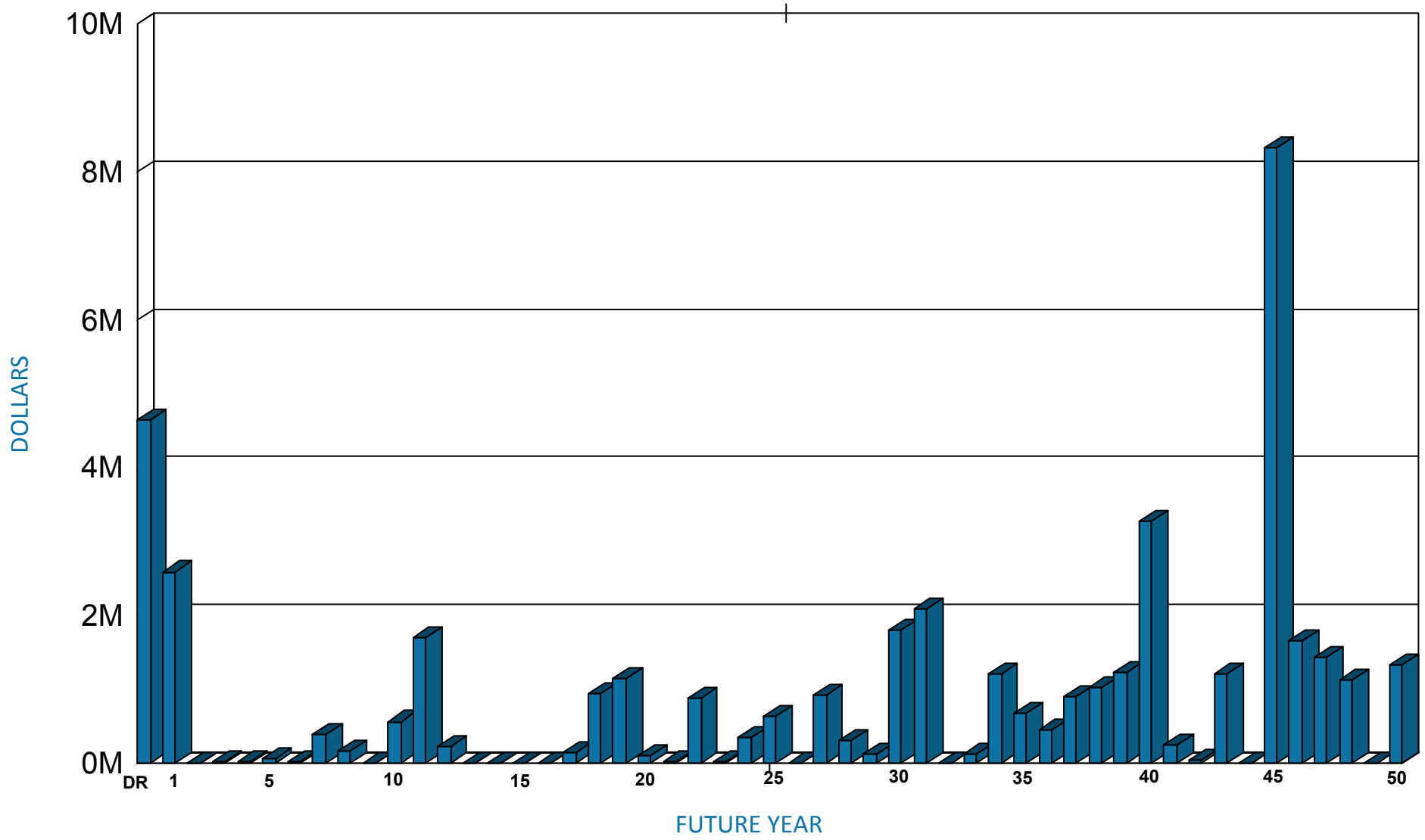
No Projected Component Replacement Cost for Asset No. 1110 for 2026

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		35,160	SF	$546,534	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$546,534	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



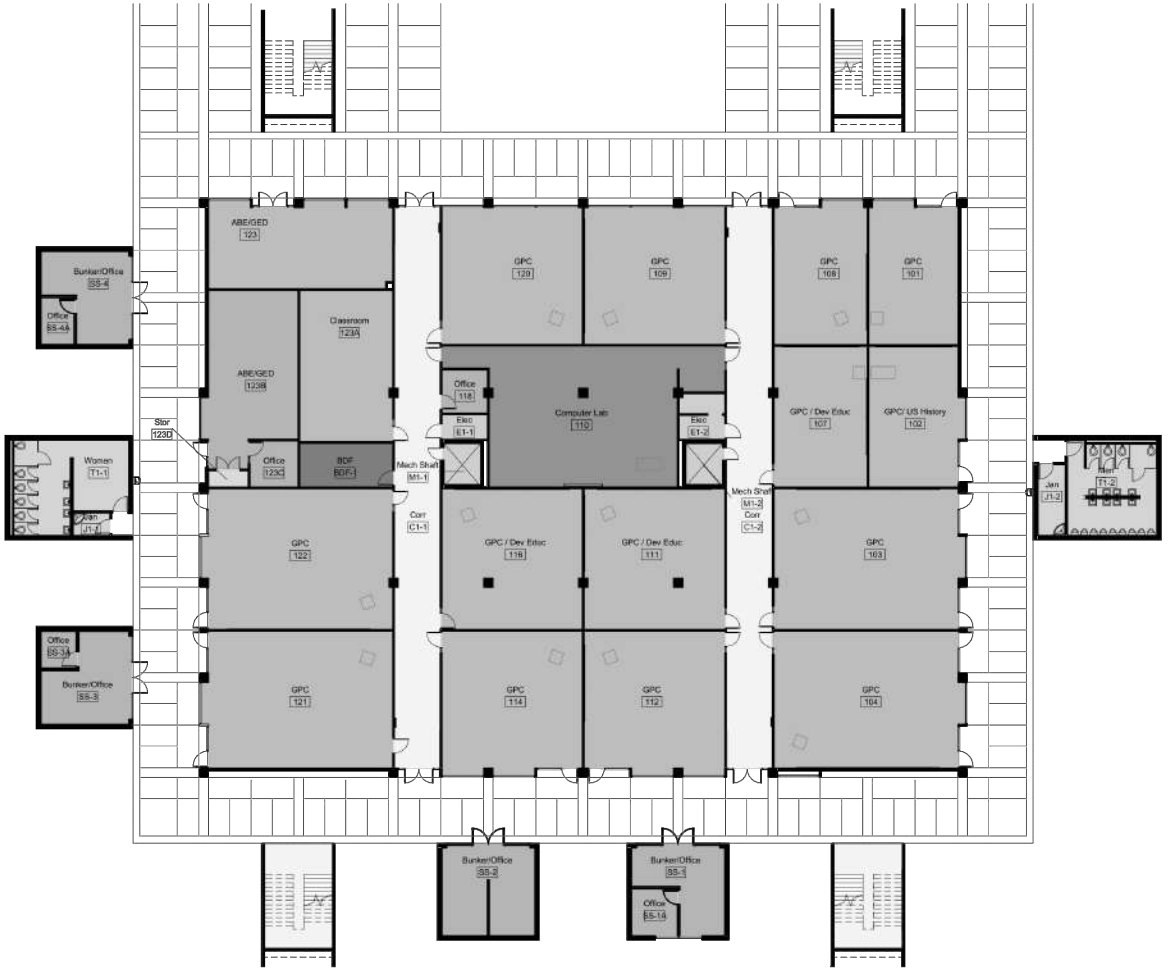
Average Annual Renewal Cost per SF $6.61

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



ES01

AC01 AC02 HE01

SOCIAL SCIENCE

BLDG NO. 1110

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/14/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 2

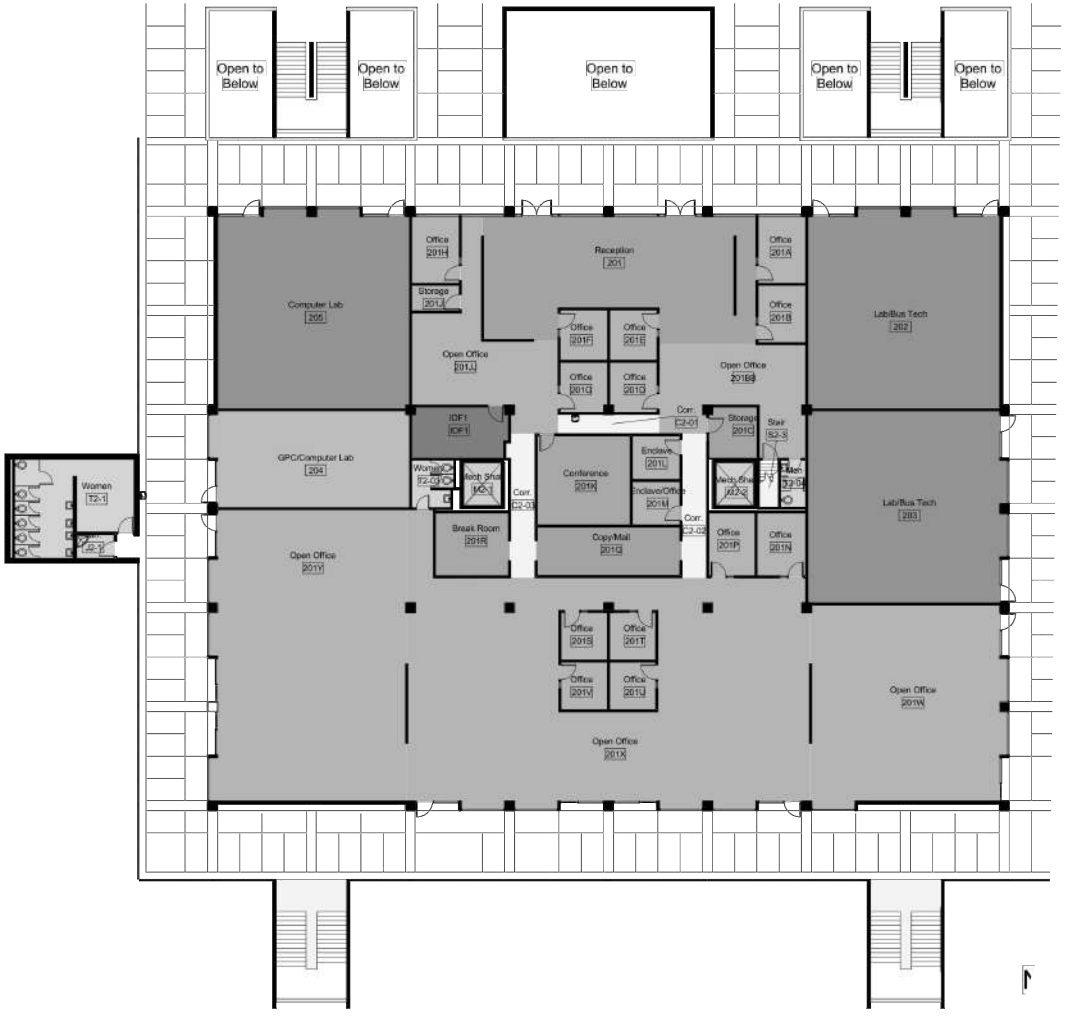
PORTLAND COMMUNITY COLLEGE

ROOF

FS01

PENTHOUSE FLOOR PLAN

AC03 HE01



AC01 AC02 HE01

SOCIAL SCIENCE

BLDG NO. 1110

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

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PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/14/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 2

SECTION 6

PHOTOGRAPHS

1110001a 8/23/2018
Penthouse doors with noncompliant hardware
Penthouse

1110001e 8/23/2018
Variable frequency drive
Penthouse

1110002a 8/23/2018
Penthouse door with noncompliant hardware
Penthouse

1110002e 8/23/2018
Air handling unit
Penthouse

1110003a 8/23/2018
Roof of the restroom tower
Roof

1110003e 8/23/2018
Supply fan
Penthouse

1110004a 8/23/2018
Penthouse exterior finish
Roof

1110004e 8/23/2018
Coil section of AHU
Penthouse

1110005a 8/23/2018
Stairwell roof and flashing and roof edge without fall protection
Roof

1110005e 8/23/2018
Supply fan
Penthouse

1110006a 8/23/2018
Typical roof drain and membrane
Roof

1110006e 8/23/2018
ATS, panelboards, and transformer
Penthouse

1110007a 8/23/2018
Cracked and deteriorating roof membrane
Roof

1110007e 8/23/2018
Condensing units
Penthouse

1110008a 8/23/2018
Lavatory and urinal
Room B17e

1110008e 8/23/2018
Switchboard
Penthouse

1110009a 8/23/2018
Standard water closet and area finishes
Room B17e

1110009e 8/23/2018
Exhaust fan
Penthouse

1110010a 8/23/2018

New casework and finishes

Second floor

1110010e 8/23/2018

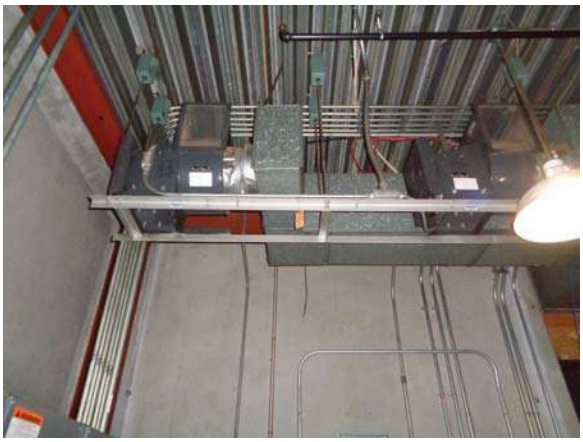
Motor control center

Penthouse

1110011a 8/23/2018

Casework with accessible sink

Second floor



1110011e 8/23/2018

Exhaust fan

Penthouse

1110012a 8/23/2018

Lavatory and area finishes

Women's restroom

1110012e 8/23/2018

Interior lighting

Penthouse

1110013a 8/23/2018
Water closet and area finishes
Women's restroom

1110013e 8/23/2018
HVAC control panels
Penthouse

1110014a 8/23/2018
Office area finishes
Second floor

1110014e 8/23/2018
Panelboard
Penthouse

1110015a 8/23/2018
Detail at the exterior wall assembly
Second floor

1110015e 8/23/2018
Drain piping
Penthouse

1110016a 8/23/2018

Detail at the glazing system

Second floor

1110016e 8/23/2018

Air handling unit

Penthouse

1110017a 8/23/2018

Typical exit door, hardware, and sign

Second floor

1110017e 8/23/2018

Interior lighting

Second floor, room 201L

1110018a 8/23/2018

Door, hardware, and accessible signage in the renovated interior

Second floor

1110018e 8/23/2018

Panelboards

Second floor, corridor

1110019a 8/23/2018

Accessible drinking fountains without required side protection

Second floor

1110019e 8/23/2018

Exit sign

Second floor, room 201

1110020a 8/23/2018

Accessible room signage

Room 201

1110020e 8/23/2018

Digital thermostat

Second floor, corridor

1110021a 8/23/2018

Casework and new finishes

Room 205

1110021e 8/23/2018

Interior lighting

Second floor, corridor

1110022a 8/23/2018

Bench seats on the exterior walkway

East elevation

1110022e 8/23/2018

Fire extinguisher

Second floor, corridor

1110023a 8/23/2018

Casework

Room 202

1110023e 8/23/2018

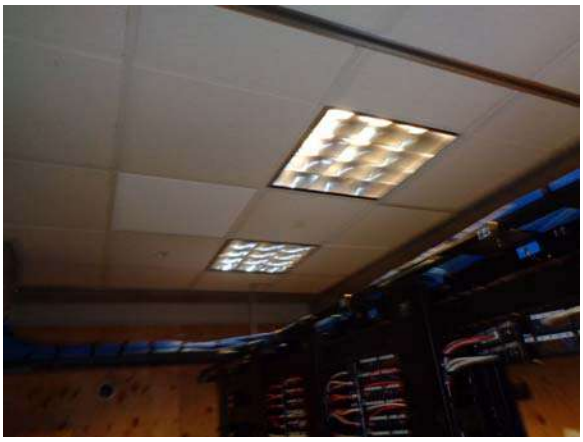
Interior lighting

Second floor, room 201X

1110024a 8/23/2018

Casework, sink, and area finishes

Room 202



1110024e 8/23/2018

Interior lighting

Second floor, room IDF-01

1110025a 8/23/2018

Typical classroom finishes

Room 108

1110025e 8/23/2018

Panelboard

Second floor, room IDF-01

1110026a 8/23/2018

Corridor exit doors and hardware

First floor

1110026e 8/23/2018

Evaporator

Second floor, room IDF-01

1110027a 8/23/2018

Bunker exterior finishes

West elevation

1110027e 8/23/2018

Interior lighting

Second floor, room 205

1110028a 8/23/2018

Bunker exterior finishes

West elevation

1110028e 8/23/2018

Interior lighting

Second floor, room 202

1110029a 8/23/2018

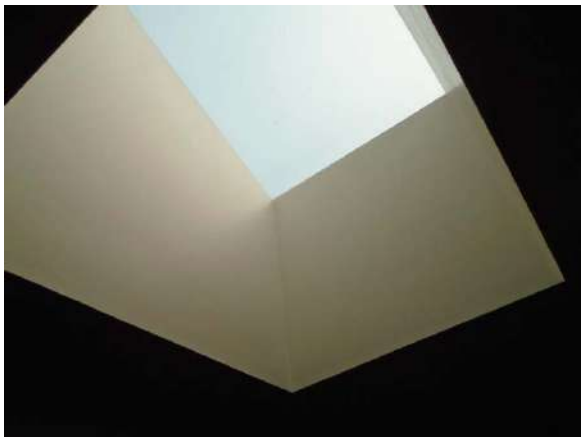
Bunker skylights and roof

West elevation

1110029e 8/23/2018

Aged piping

Second floor, room 202



1110030a 8/23/2018

Skylight and ceiling finish

Bunker SS-1

1110030e 8/23/2018

Aged piping

Second floor, room 202

1110031a 8/23/2018

Bunker interior finishes

Bunker SS-1

1110031e 8/23/2018

Interior lighting

Second floor, room 203

1110032a 8/23/2018

Office with fire-rated door

Bunker SS-1

1110032e 8/23/2018

Interior lighting

Second floor, janitors closet

1110033a 8/23/2018

Wood finish at the exterior wall system

West exterior

1110033e 8/23/2018

Interior lighting

Second floor, men's restroom

1110034a 8/23/2018
Wall system at a typical bunker
Bunker SS-1

1110034e 8/23/2018
Interior lighting
First floor, room 101

1110035a 8/23/2018
Noncompliant drinking fountain
South elevation

1110035e 8/23/2018
Interior lighting
First floor, room 108

1110036a 8/23/2018
Urinals, lavatories, and area finishes
Tower restroom

1110036e 8/23/2018
Interior lighting
First floor, room 109

1110037a 8/23/2018
First floor under the connection to the Science Technology Building
South elevation

1110037e 8/23/2018
Panelboards
First floor, room E1-2

1110038a 8/23/2018
First floor walkway at the restroom tower
South elevation

1110038e 8/23/2018
Interior lighting
First floor, room 107

1110039a 8/23/2018
First floor walkway
West elevation

1110039e 8/23/2018
Interior lighting
First floor, room 111

1110040a 8/23/2018
Typical entrances and second floor guardrail
West elevation

1110040e 8/23/2018
Interior lighting
First floor, room 103

1110041e 8/23/2018
Interior lighting
First floor, room 112

1110042e 8/23/2018
Switchboard
Site

1110043e 8/23/2018
Switchboard
Site

1110044e 8/23/2018
Smoke detector and interior lighting
First floor, room SS-1

1110045e 8/23/2018

Interior lighting

First floor, room SS-1

1110046e 8/23/2018

Interior lighting

First floor, room 122

1110047e 8/23/2018

Evaporator

First floor, room BDF 1-01

1110048e 8/23/2018

Safepath panel

First floor, room BDF 1-01

1110049e 8/23/2018

Fire alarm panels

First floor, room E1-01

1110050e 8/23/2018

Interior lighting

First floor, room 123A

1110051e 8/23/2018

Air handling unit

First floor

1110052e 8/23/2018

Interior lighting

First floor, women's restroom

1110053e 8/23/2018

Air handling unit

First floor, janitors closet

1110054e 8/23/2018

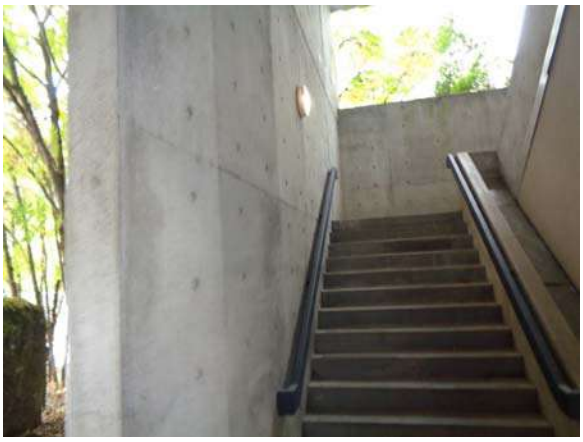
Piping

First floor, janitors closet

1110055e 8/23/2018

Exterior lighting

Site



1110056e 8/23/2018

Exterior lighting

Stairwell

1110057e 8/23/2018

Package unit

Roof

1110058e 8/23/2018

Package unit

Roof

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	PORTLAND COMMUNITY COLLEGE
Asset Number	1110
Asset Name	Social Science
Year Built or Last Energy Renovation	1968

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

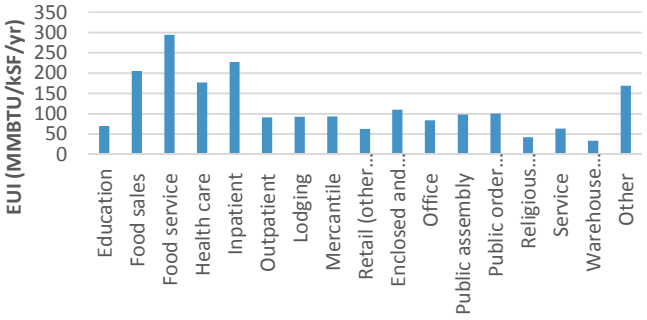
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1960 to 1989
Benchmark EUI (MMBTU/kSF/yr) =	**70.1**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 49.1
Energy Efficient (consumes 10% to 30% less energy)	49.1 <= EUI <= 63.1
Similar (consumes within 10% less or 10% more energy)	63.1 < EUI < 77.1
Energy Inefficient (consumes 10% to 30% more energy)	77.1 <= EUI <= 91.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 91.1

Figure 1. EUIs for Buildings Constructed/Renovated 1960 to 1989

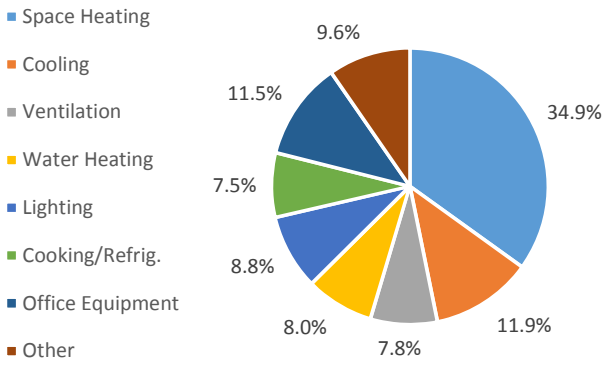


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

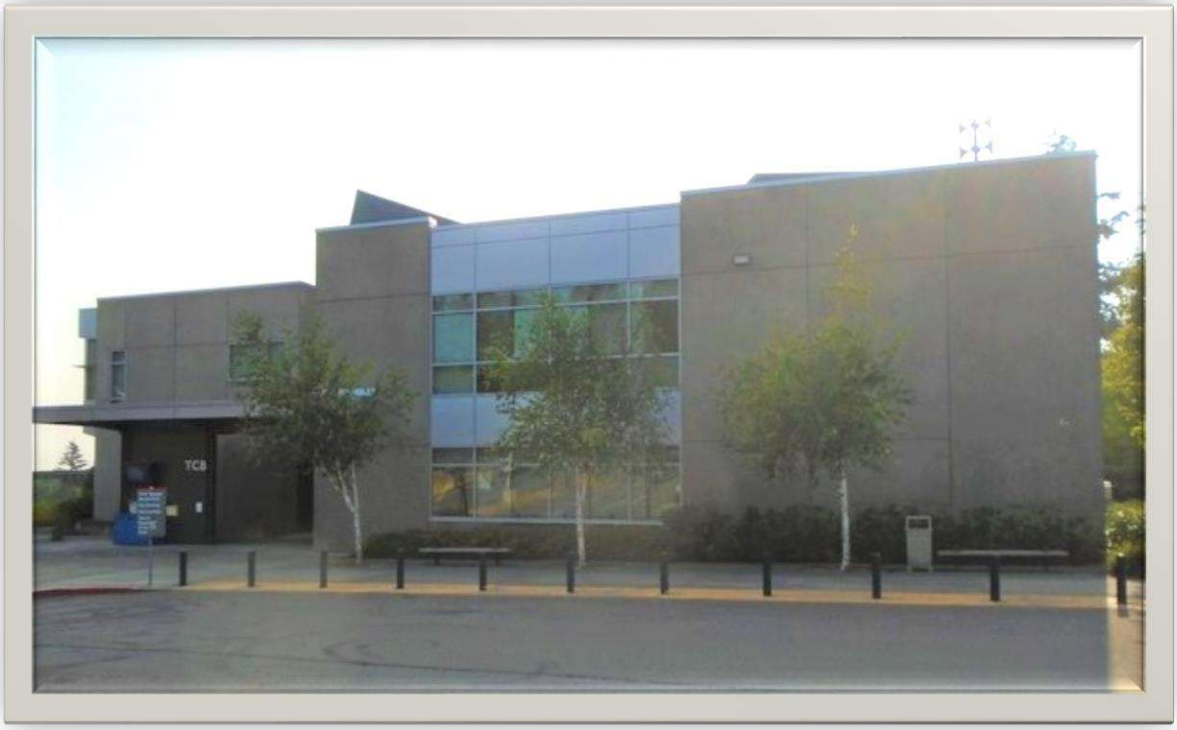
PORTLAND COMMUNITY COLLEGE

Sylvania Campus

Facility Condition Assessment

Technology Classroom Building
Asset 1130

Inspected August 21, 2018



ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

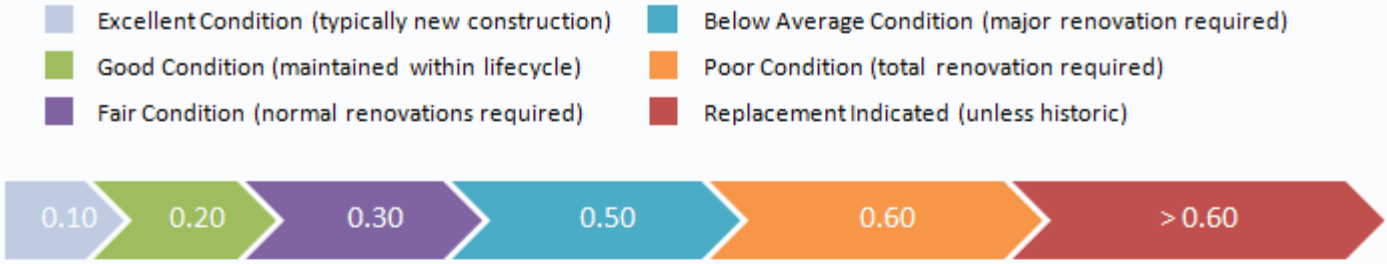
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

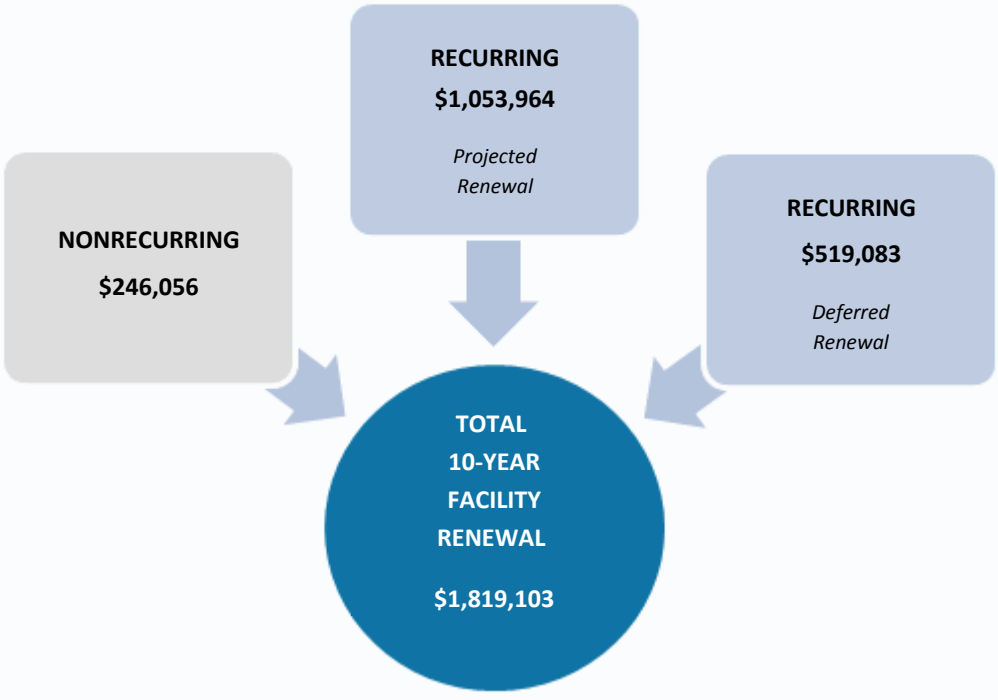
ASSET CODE	1130		
ASSET NAME	TECHNOLOGY CLASSROOM BUILDING	**CURRENT REPLACEMENT VALUE**	$19,053,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.10
YEAR BUILT	2004	**FACILITY CONDITION INDEX**	0.03
GSF	46,394	**10-YEAR $/SF**	39.21
INSPECTION DATE	08/21/2018		

FCNI Scale

The FCNI for this asset is **0.10**



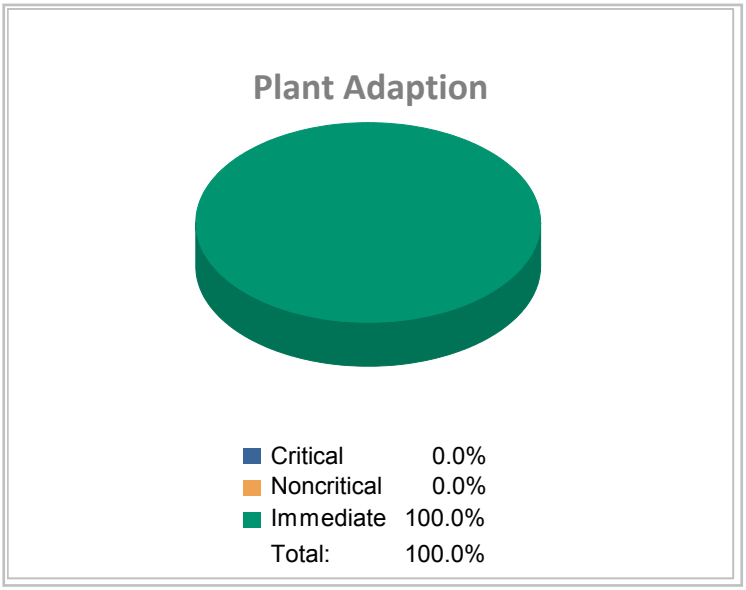
Total Facility Renewal Costs



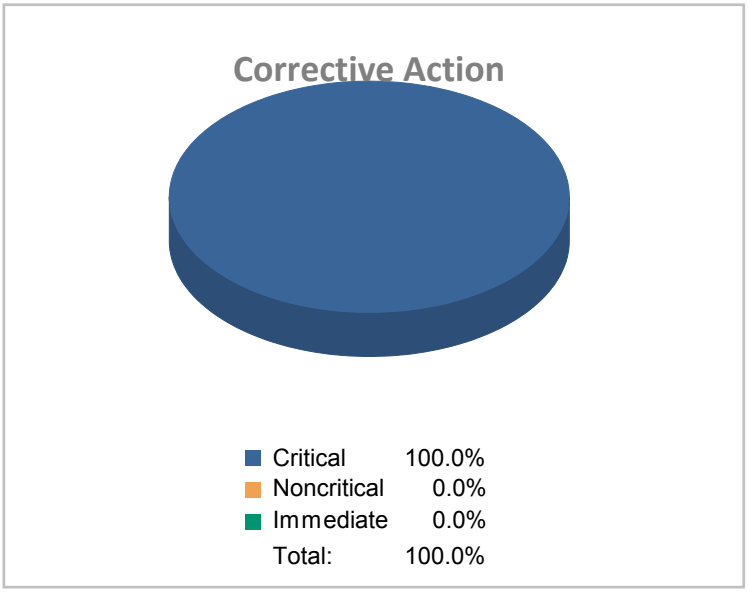
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$7,273**
2 - Critical	**$0**
3 - Noncritical	**$0**

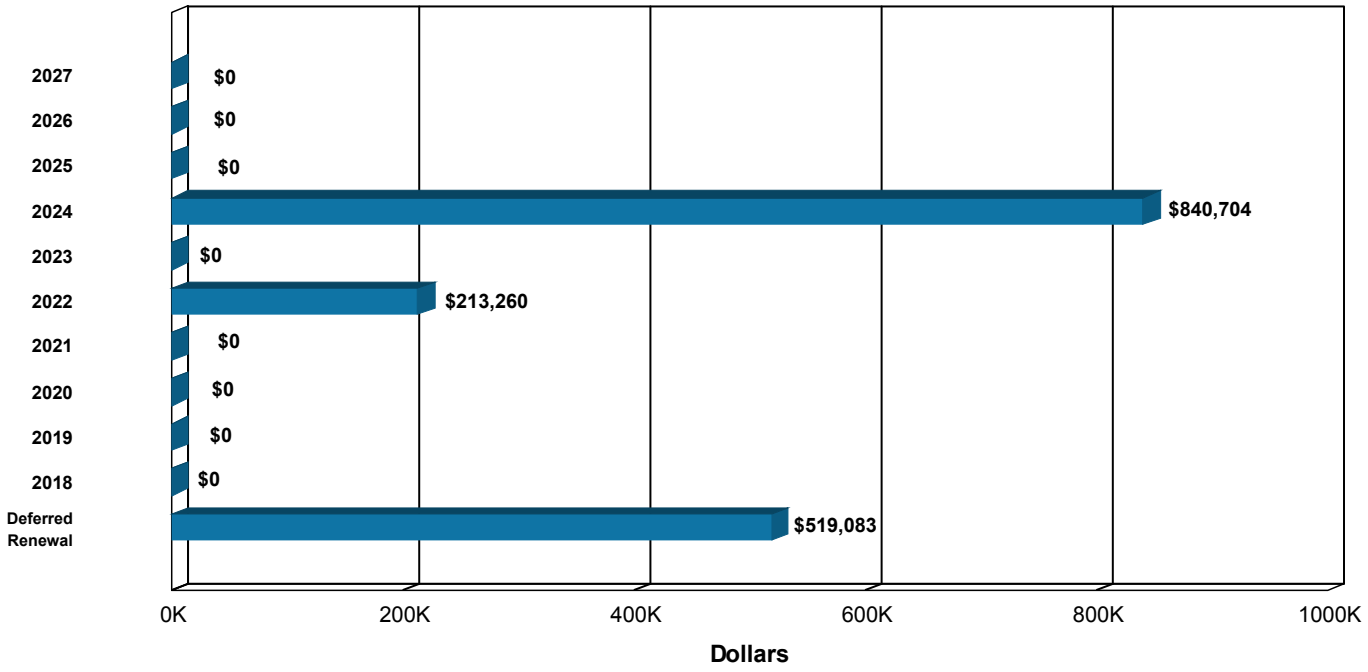


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$238,783**
3 - Noncritical	**$0**

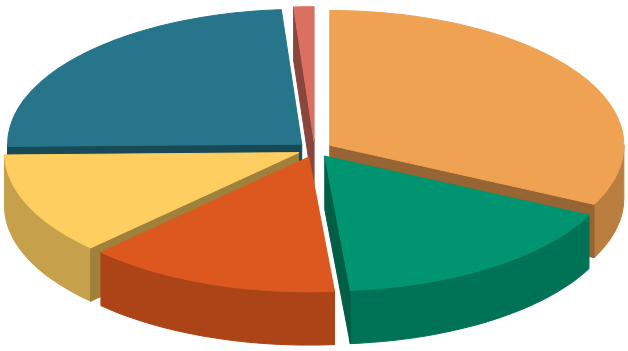


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$0	0%
Electrical	$587,520	32%
Exterior	$296,740	16%
Fire/Life Safety	$250,378	14%
Health	$0	0%
HVAC	$224,148	12%
Interiors	$438,300	24%
Plumbing	$22,018	1%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,819,103**	

ASSET SUMMARY

The Technology Classroom Building is a three-story, 46,394 gross square foot building on the campus of Portland Community College. Built in 2004, it houses the Distance Education Program, the Computer Technology labs and offices, and includes 11 general-purpose classrooms as well as support space for the academic programs. A mechanical penthouse above the third floor houses the majority of the mechanical equipment. The lower floor includes video production studios and program office space. The exterior is finished with concrete, wood, and metal panels. The roof includes both flat and sloped sections as well as a large skylight over the central atrium.

Information for this report was gathered during a site visit conducted on August 21, 2018.

Site

The building is located on a sloping site just east of the Science Technology building and south of the library. The lower floor is below grade on the east and at grade on the west of the building. A bridge connects the Science Technology building to the Technology Classroom Building at the second floor. Service access and parking are provided by the common use asphalt-paved parking lot to the east. Pedestrian access is by way of concrete sidewalks on all sides of the building. Landscaping is lush and mature, and in good condition.

Exterior Structure

The roof includes a multi-ply asphaltic system which should be at the midpoint of its lifecycle. However, extensive alligatoring of the membrane top surface is a sign of deterioration which should be attended to as soon as possible. Although the roof system probably has more than ten years of life remaining, a budget is included with this report for any necessary repairs. The roof also includes a corrugated metal panel roof system which is in good condition. There is a large skylight/clerestory window area which is in good condition and a fiberglass panel skylight which is approaching the end of its normal life span and should be replaced in the next ten years. Exterior doors are flush, hollow-metal and aluminum and glass storefront units, all of which should last another ten or more years. The glazing system includes both storefront and curtainwall systems which should last beyond the next ten years. The exterior walls are cast concrete, metal panels, and wood siding. All of these materials appear to be in good condition and should not require any work at this time.

Interior Finishes/Systems

Floor finishes are carpet and polished, sealed concrete. These finishes are at the end of their normal lifecycle and should be replaced or renewed at the next opportunity. In addition, the concrete floors are cracked in a few areas. These cracks should be filled as part of regular maintenance. The interior wall finishes are paint, ceramic tile, and wood paneling. The tile and wood paneling should last beyond the

next ten years, but it is recommended that the painted walls be repainted within the next few years. The ceilings are painted hard surfaces and suspended acoustical tile systems, all of which are in good condition. The interior doors, along with their hardware, and the casework in break areas and workrooms are also in good condition with no recommendations.

Accessibility

As this building was constructed fairly recently, it is generally in compliance with most of the current accessibility requirements. The entrances are at grade level and some are provided with powered door openers. The interior door hardware and signage is compliant with accessibility standards and the restrooms provide the required accessible features. The elevator has an accessible control panel, and the stairs have compliant railings. Therefore, no accessibility upgrades are recommended at this time.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The exit access pathways and exit doors are adequately marked with illuminated exit signs, and the location, number, and size of the exits appear to be adequate for this facility. Emergency lighting is provided by select fixtures tied to the emergency power network. This is an adequate application with no recommendations at this time.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include electrical and mechanical spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The facility has a modern, Silent Knight fire alarm system and the main addressable fire alarm panel is in a corridor leading to room M1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes provide notification. The system appears to provide adequate coverage and is believed to have been installed in 2004. Based on industry standards, the system will reach the end of its service life in the next few years and should be considered for upgrade on a low priority basis. Additionally, a Wheelock mass notification panel is inventoried in this report for information purposes.

The facility has an automatic sprinkler system with additional fire suppression provided by wall-mounted manual chemical fire extinguishers. The sprinkler system is believed to be a combination of a dry-pipe and a wet-pipe system. A small compressor is present for pressurization. The system appears to provide adequate coverage and is in good condition.

HVAC

The facility is on the campus hot water loop with pumps to circulate the heating hot water. The pumps are in good condition and have remaining service life. Cooling is provided by two, McQuay air-cooled condensers that are charged with R22 DX refrigerant for cooling. The condensers are in adequate condition but showing some minor deterioration. They should continue to serve the facility for the next ten years.

Two indoor air handling units (AHUs) provide tempered air. The units contain hot water coils and cooling coils equipped with DX refrigerant. Each AHU has a matching return fan. Distribution equipment consists of metal ductwork and the system is controlled by a digital application. The HVAC system is in good condition and appears to be properly maintained. It should continue to serve the facility during the scope of this report, although a partial controls upgrade may be necessary.

The facility also five split systems that serve IT and electrical rooms and are charged with DX refrigerant for cooling. The split systems have remaining service life with no recommendations at this time.

Facility exhaust is provided by rooftop centrifugal fans and an inline exhaust fan. The fans serve restrooms, the elevator machine room, and general exhaust needs. They were installed in 2004 and appear to be serviceable with no recommendations.

Electrical

Power is supplied to the facility at 480/277 volts via underground utilities. A Square D, 1,200 amp main switchboard receives the power for distribution and has substantial remaining service life. The electrical distribution system consists of panelboards that distribute power at 480/277 volts or utilize dry-type transformers to step power down to 120/208 volts. Additional panelboards are then used to distribute the lower voltage power. Circuits are energized for mechanical, lighting, and general purpose loads. The equipment appears to be well marked and encased. The system should outlast the scope of this report.

The interior lighting consists of surface-mount, lay-in, and suspended fixtures equipped with parabolic, acrylic, or no lenses. The lighting is lamped with T8 fluorescent bulbs. Occupancy sensors in select rooms conserve energy. The interior lighting appears to be well maintained and in good condition. However, the lighting is believed to be original and will reach the end of its service life within the scope of this report.

The exterior lighting consists of eave-mounted can-type fixtures, wall-mounted HID fixtures, and ground-mounted HID fixtures. Additionally, pole-mounted fixtures with LED bulbs and bollard style fixtures are on the site. Although the inspection was performed during daylight, the lighting scheme

appears to provide adequate coverage. However, some of the equipment has reached lifecycle depletion and should be upgraded.

Emergency power is provided by a Caterpillar diesel-fired generator that was installed in 2004. A GE Zenith automatic transfer switch (ATS) provides the power for distribution. Both are in good condition with no recommendations.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units serve an air handling unit and return fan. The VFDs are new and in excellent condition.

Plumbing

Domestic water is supplied through a copper piping network. Backflow preventers protect the sprinkler and domestic water systems from cross contamination. Drain piping is cast-iron with no hub connections and some plastic applications. The piping systems, where they could be viewed, are in good condition and have substantial remaining service life. However, the backflow preventers will reach lifecycle depletion within the next ten years and may need to be replaced.

Domestic hot water is provided by a State commercial-grade electric water heater installed in 2016. The unit has a tank capacity of 80 gallons and is in excellent condition. Additionally, an instantaneous water heater serves a break room sink on the third floor. This circa 2007 unit has reached the end of its service life and should be replaced.

A Zoeller sump pump system serves the elevator pit. While access was no available to the pit, the unit is believed to be original. Based on industry standards, it will reach the end of its service life within the scope of this report.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. The kitchen sinks will reach the end of their anticipated lifecycle in the next ten years and should be replaced. The remaining fixtures are within their normal lifecycle and should last another ten or more years.

Vertical Transportation

The facility has a hydraulic passenger elevator that is original to construction. The elevator serves four landings and is controlled by a solid state nonproprietary MCE controller. It appears to be well maintained and was operating properly on the day of inspection. There are no recommendations at this time.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 21, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
EXTERIOR	0	208,939	0	12,817	0	0	0	0	0	0	74,984	0	0	0	$296,740
INTERIOR	0	0	0	438,300	0	0	0	0	0	0	0	0	0	0	$438,300
PLUMBING	0	0	0	990	0	0	0	0	0	0	21,028	0	0	0	$22,018
HVAC	0	0	0	66,976	0	0	0	0	0	0	157,172	0	0	0	$224,148
FIRE/LIFE SAFETY	7,273	29,845	0	0	0	0	0	0	213,260	0	0	0	0	0	$250,378
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	587,520	0	0	0	$587,520
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$7,273	$238,783	$0	$519,083	$0	$0	$0	$0	$213,260	$0	$840,704	$0	$0	$0	$1,819,103
TOTAL NONRECURRING PROJECT NEEDS			$246,056	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,573,047	

CURRENT REPLACEMENT VALUE	$19,053,000
FACILITY CONDITION NEEDS INDEX	0.10
FACILITY CONDITION INDEX	0.03

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
46,394	$1,819,103	$39.21

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$0	$0	$0
EXTERIOR	$208,939	$87,801	$296,740
INTERIOR	$0	$438,300	$438,300
PLUMBING	$0	$22,018	$22,018
HVAC	$0	$224,148	$224,148
FIRE/LIFE SAFETY	$37,118	$213,260	$250,378
ELECTRICAL	$0	$587,520	$587,520
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$246,056**	**$1,573,047**	**$1,819,103**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
1130FS02	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	7,273
1130ES01	ROOF REPAIRS	B3010	2	Corrective Action	208,939
1130FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	F1040	2	Corrective Action	29,845
				TOTAL	**$246,056**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1130	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	Deferred Renewal	946
1130	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	Deferred Renewal	11,870
1130	IW01	WALL FINISH - APPLIED, STANDARD				C3010	Deferred Renewal	115,101
1130	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	Deferred Renewal	294,378
1130	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE			C3020	Deferred Renewal	28,820
1130	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		322	D2020	Deferred Renewal	990
1130	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	Deferred Renewal	43,736
1130	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	Deferred Renewal	23,239
1130	FA01	FIRE ALARM SYSTEM - DEVICES			M1-01	D4030	2022	199,403
1130	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		M1-01	D4030	2022	13,857
1130	DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			B2030	2024	13,541
1130	DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			B2030	2024	27,081
1130	RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				B3020	2024	34,363
1130	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	2024	2,318
1130	BF01	BACKFLOW PREVENTER (<=1 INCH)	SPRINKLER		M1-01	D2020	2024	755
1130	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS, FOUNTAIN		103	D2020	2024	1,509

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
1130	BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC	0000006845	M1-01	D2020	2024	7,331
1130	BF04	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER		M1-01	D2020	2024	8,406
1130	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	ZOELLER, ELEV PIT		M1-01	D2030	2024	710
1130	BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				D3060	2024	157,172
1130	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT		ROOF	D5020	2024	2,543
1130	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			D5020	2024	7,628
1130	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	GROUND		SITE	D5020	2024	3,086
1130	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	2024	520,989
1130	LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				D5020	2024	53,273
							TOTAL	$1,573,047

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
2	1130FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$29,845
3	1130ES01	ROOF REPAIRS	2	$208,939
		TOTAL FOR CORRECTIVE ACTION		**$238,783**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	1130FS02	ELIMINATE FIRE RATING COMPROMISES	1	$7,273
		TOTAL FOR PLANT ADAPTION		**$7,273**
		GRAND TOTAL:		**$246,056**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	1130ES01	2	Corrective Action	ROOF REPAIRS	$208,939
				TOTAL FOR EXTERIOR	**$208,939**
1	1130FS02	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$7,273
2	1130FS01	2	Corrective Action	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$29,845
				TOTAL FOR FIRE/LIFE SAFETY	**$37,118**
				GRAND TOTAL:	**$246,056**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	1130FS02
Priority Sequence:	1
Priority Class:	Immediate
Project Class:	Plant Adaption
Date Basis:	8/21/2018

Category Code: FS5C

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 2,3,P

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. These areas include electrical and mechanical spaces. Although only these instances were noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	LOT	1	$1,200	$1,200	$4,000	$4,000	$5,200
Base Material/Labor Costs				**$1,200**		**$4,000**	
Indexed Material/Labor Costs				**$1,193**		**$4,032**	**$5,225**
Construction Mark Up at 20.0%							**$1,045**
Original Construction Cost							**$6,270**
Date of Original Estimate: 8/21/2018						**Inflation**	**$0**
Current Year Construction Cost							**$6,270**
Professional Fees at 16.0%							**$1,003**
TOTAL PROJECT COST							**$7,273**

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	1130FS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Corrective Action	**Component:**	GENERAL
Date Basis:	8/21/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	27	$304	$8,208	$488	$13,176	$21,384
			Base Material/Labor Costs	**$8,208**		**$13,176**	
			Indexed Material/Labor Costs	**$8,159**		**$13,281**	**$21,440**
					Construction Mark Up at 20.0%		**$4,288**
					Original Construction Cost		**$25,728**
Date of Original Estimate: 8/21/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$25,728**
					Professional Fees at 16.0%		**$4,117**
					TOTAL PROJECT COST		**$29,845**

All costs shown as Present Value

ROOF REPAIRS

Project Number:	1130ES01	**Category Code:** ES4A	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	ROOF
Date Basis:	8/21/2018	**Element:**	REPAIR

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Floor-wide: Floor(s) R

Description

Extensive alligatoring of the membrane top surface is a sign of deterioration which should be attended to as soon as possible. Although the roof system probably has more than ten years life remaining, a budget is included with this report for any necessary repairs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Built-up roof system, 4-PLY, coal tar-pitch, 2 inch insulation, flashing, cap sheet	SF	10,000	$10.02	$100,200	$5.01	$50,100	$150,300
Base Material/Labor Costs				**$100,200**		**$50,100**	
Indexed Material/Labor Costs				**$99,599**		**$50,501**	**$150,100**
Construction Mark Up at 20.0%							**$30,020**
Original Construction Cost							**$180,120**
Date of Original Estimate: 8/21/2018						**Inflation**	**$0**
Current Year Construction Cost							**$180,120**
Professional Fees at 16.0%							**$28,819**
TOTAL PROJECT COST							**$208,939**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL	SOFFITS			1,500	SF	1.12	$17,469	2004	30		2034
EW07	WALL, EXTERIOR, SIDING, WOOD BOARD, PREMIUM				3,160	SF	1.12	$55,933	2004	40		2044
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				1,900	SF	1.12	$44,903	2004	25		2029
EW14	WALL, EXTERIOR, TILT-UP OR PRECAST CONCRETE PANELS - RESTORE NATURAL FINISH				7,580	SF	1.12	$17,459	2004	30		2034
WN03	GLASS, CURTAIN WALL, STANDARD				4,080	SF	1.12	$773,332	2004	60		2064
WN05	GLASS, STOREFRONT				2,720	SF	1.12	$384,025	2004	40		2044
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				10	LEAF	1.00	$30,222	2004	25		2029
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				1	LEAF	1.00	$2,007	2004	40		2044
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			2	EA	1.00	$13,541	2004	20		2024
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS			4	EA	1.00	$27,081	2004	20		2024
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				1	EA	1.00	$946	2004	12	1	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR				10	EA	1.00	$11,870	2004	12	1	DR
RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH - R30				23,320	SF	1.00	$487,562	2004	30		2034
RR11	ROOF - PANEL, ALUMINUM OR GALVANIZED, CORRUGATED				3,180	SF	1.00	$33,949	2004	40		2044
RR24	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL				570	SF	1.00	$34,363	2004	20		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				2,800	SF	1.00	$801,286	2004	35		2039
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				71	LEAF	1.00	$157,012	2004	60		2064
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				21	LEAF	1.00	$77,039	2004	60		2064
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			71	EA	1.00	$53,456	2004	35		2039
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			21	EA	1.00	$15,811	2004	35		2039
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RMS	65	LF	1.00	$36,457	2004	30		2034
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS	110	LF	1.00	$61,697	2004	30		2034
IW01	WALL FINISH - APPLIED, STANDARD				41,240	SF	1.00	$115,101	2004	12	1	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				2,580	SF	1.00	$104,494	2004	60		2064
IW07	WALL FINISH - WOOD PANEL, PREMIUM				7,730	SF	1.00	$346,816	2004	80		2084
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				24,710	SF	1.00	$294,378	2004	12	1	DR
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE			8,240	SF	1.00	$28,820	2004	10	3	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				28,000	SF	1.00	$311,645	2004	45		2049
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				4,940	SF	1.00	$13,788	2004	24		2028
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS		0000004386	M4-01	1	EA	1.00	$257,984	2004	25		2029

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				3	EA	1.00	$8,082	2004	25		2029
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				16	EA	1.00	$21,619	2004	35		2039
FX04	PLUMBING FIXTURE - SINK, KITCHEN				3	EA	1.00	$2,318	2004	20		2024
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				3	EA	1.00	$3,413	2004	35		2039
FX10	PLUMBING FIXTURE - URINAL				5	EA	1.00	$5,393	2004	35		2039
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				18	EA	1.00	$30,509	2004	35		2039
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS, FOUNTAIN		103	1	EA	1.50	$1,509	2004	20		2024
BF01	BACKFLOW PREVENTER (<=1 INCH)	SPRINKLER		M1-01	1	EA	0.75	$755	2004	20		2024
BF03	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC	0000006845	M1-01	1	EA	1.00	$7,331	2004	20		2024
BF04	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER		M1-01	1	EA	1.00	$8,406	2004	20		2024
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				46,394	SF	1.00	$531,253	2004	50		2054
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	STATE	0000006433	J2-01	80	GAL	1.00	$12,774	2016	30		2046
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX		322	1	EA	1.00	$990	2007	10		DR
PD02	DRAIN PIPING SYSTEM - CLASSROOM				46,394	SF	1.00	$797,063	2004	60		2064
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	ZOELLER, ELEV PIT		M1-01	1	EA	1.00	$710	2004	20		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	SPRINKLER	0000009337	M1-01	1	HP	1.00	$2,282	2004	25		2029
CH07	CHILLER - AIR COOLED PACKAGE (<=35 TONS)	MCQUAY	0000001278	SITE	20	TON	1.00	$64,992	2004	30		2034
CH09	CHILLER - AIR COOLED PACKAGE (75-150 TONS)	MCQUAY	0000001216	ROOF	100	TON	1.00	$126,240	2004	30		2034
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	FUJITSU	0000000631	ROOF	1	TON	0.69	$1,580	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004650	ROOF	1	TON	0.46	$1,053	2016	25		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000004651	ROOF	2	TON	0.46	$2,107	2016	25		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000001280	SITE	3	TON	0.46	$3,160	2004	25		2029
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI		SITE	3	TON	0.46	$3,160	2004	25		2029
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	FUJITSU	0000006818	IDF-2	1	TON	0.69	$2,049	2004	30		2034
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	MITSUBISHI	0000006817	IDF	1	TON	0.46	$1,366	2016	30		2046
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005323	BDF	2	TON	0.46	$2,138	2016	30		2046
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI	0000007570	E1-01	3	TON	0.46	$2,581	2004	30		2034
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	MITSUBISHI	0000006847	108C	3	TON	0.46	$2,581	2004	30		2034
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-2	0000001262	M1-02	15	HP	1.00	$97,601	2004	35		2039
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU-1	0000001217	M4-02	40	HP	1.00	$221,108	2004	35		2039

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN02	FAN - AXIAL, RETURN, 1.5" SP (3-5 HP) 13,200 CFM	RF-2	0000001263	M1-02	5	HP	1.00	$11,529	2004	35		2039
FN05	FAN - AXIAL, RETURN, 1.5" SP (10-15 HP) 27,000 CFM	RF-1	0000001218	M4-02	15	HP	1.00	$29,431	2004	35		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000001214	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000001215	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-3	0000006926	ROOF	1	EA	1.00	$3,773	2004	25		2029
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	GREENHECK, ELEV MR		M4-01	1	HP	1.00	$1,321	2004	35		2039
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				46,394	SF	1.00	$1,650,429	2004	45		2049
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	0000001265	M1-02	7	HP	1.07	$12,678	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-2	0000001266	M1-02	7	HP	1.07	$12,678	2004	30		2034
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				46,394	SF	1.00	$157,172	2004	20		2024
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				46,394	SF	1.00	$43,736	2004	10	3	DR
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				46,394	SF	1.00	$23,239	2004	10	3	DR
FS01	FIRE SPRINKLER SYSTEM - WET				40,000	SF	1.00	$541,146	2004	80		2084
FS02	FIRE SPRINKLER SYSTEM - DRY				6,394	SF	1.00	$97,068	2004	25		2029
FA01	FIRE ALARM SYSTEM - DEVICES			M1-01	46,394	SF	1.00	$199,403	2004	18		2022

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT		M1-01	1	EA	1.00	$13,857	2004	18		2022
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	WHEELOCK		BDF	1	EA	1.00	$13,857	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				46,394	SF	1.00	$1,152,107	2004	50		2054
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	4MDP	0000001257	E1-01	1,200	AMP	1.00	$89,981	2004	40		2044
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RF-2	0000007687	M1-02	5	HP	1.00	$3,633	2016	15		2031
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	AHU-2	0000007686	M1-02	15	HP	1.00	$6,433	2016	16		2032
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			15	EA	1.00	$7,628	2004	20		2024
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT		ROOF	5	EA	1.00	$2,543	2004	20		2024
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	GROUND		SITE	4	EA	1.00	$3,086	2004	20		2024
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			1	EA	1.00	$772	2016	20		2036
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	6	EA	1.00	$7,896	2016	20		2036
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	9	EA	1.00	$17,528	2016	40		2056
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	9	EA	1.00	$11,263	2016	20		2036
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				46,394	SF	1.00	$520,989	2004	20		2024
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				23,197	SF	1.00	$53,273	2004	20		2024

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
GN03	GENERATOR - DIESEL (100-200 KW)	CATERPILLAR	0000000932	SITE	200	KW	1.00	$123,303	2004	25		2029
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-1	0000009105	E1-01	80	AMP	1.00	$4,422	2004	25		2029
							Grand Total:	$11,400,290				

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		1	EA	$946	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR		10	EA	$11,870	DR
C3010	WALL FINISH - APPLIED, STANDARD		41,240	SF	$115,101	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		24,710	SF	$294,378	DR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	POLISHED CONCRETE	8,240	SF	$28,820	DR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	EEMAX	1	EA	$990	DR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		46,394	SF	$23,239	DR
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		46,394	SF	$43,736	DR
				TOTAL DEFERRED RENEWAL COST	$519,083	

No Projected Component Replacement Cost for Asset No. 1130 for 2018

No Projected Component Replacement Cost for Asset No. 1130 for 2019

No Projected Component Replacement Cost for Asset No. 1130 for 2020

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 1130 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS	SILENT KNIGHT	1	EA	$15,596	2022
D4030	FIRE ALARM SYSTEM - DEVICES		46,394	SF	$224,430	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$240,026**	

No Projected Component Replacement Cost for Asset No. 1130 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3020	ROOF SKYLIGHT - FIBERGLASS ROOF SANDWICH PANEL		570	SF	$41,031	2024
B2030	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS	2	EA	$16,168	2024
B2030	DOOR OPERATOR, POWER-ASSIST	EXTERIOR DRS	4	EA	$32,336	2024
D2010	PLUMBING FIXTURE - SINK, KITCHEN		3	EA	$2,767	2024
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		46,394	SF	$622,088	2024
D5020	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL		23,197	SF	$63,611	2024
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	GROUND	4	EA	$3,685	2024

RECURRING COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

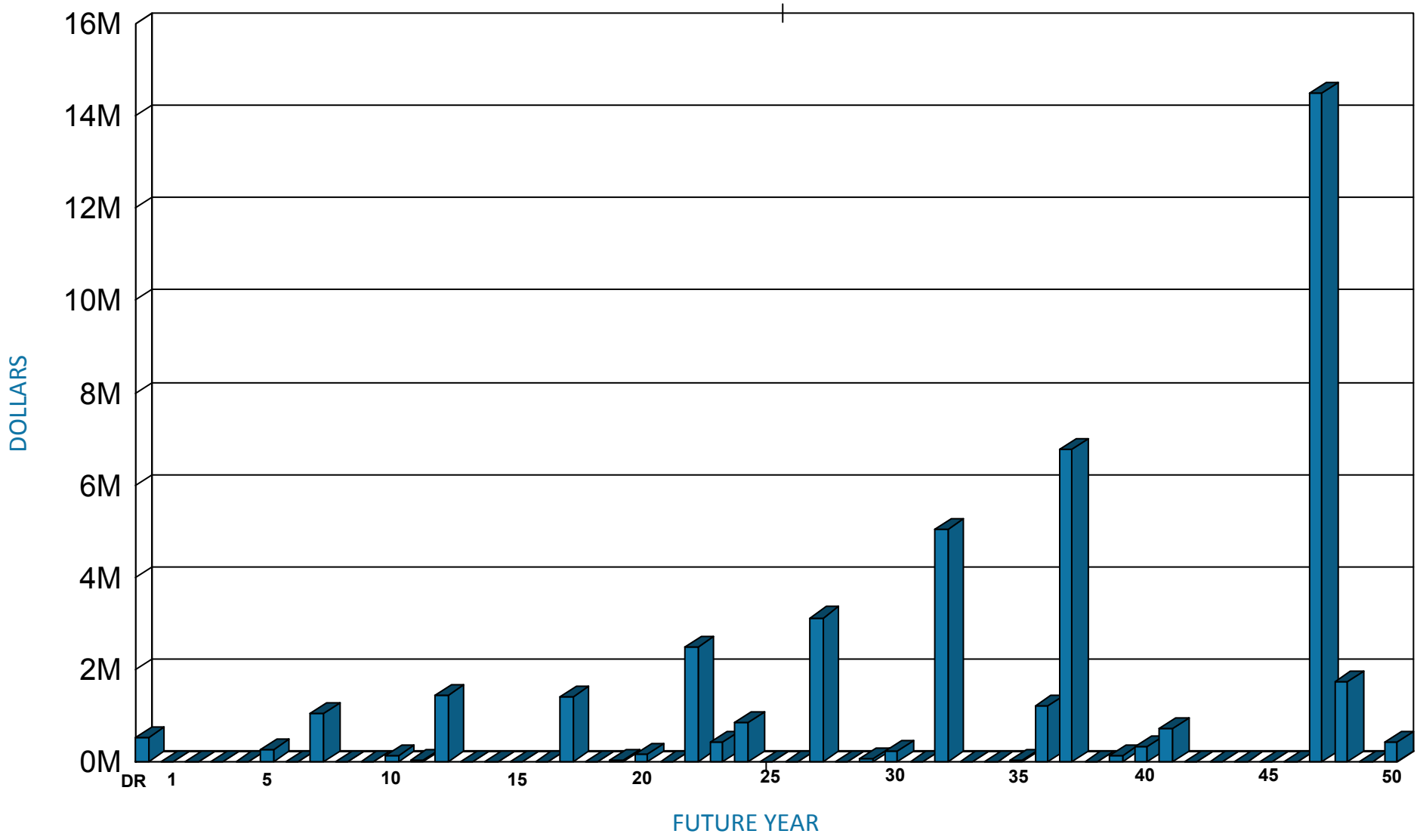
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT	15	EA	$9,109	2024
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT	5	EA	$3,036	2024
D3060	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM		46,394	SF	$187,672	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS, FOUNTAIN	1	EA	$1,802	2024
D2020	BACKFLOW PREVENTER (2-3 INCHES)	DOMESTIC	1	EA	$8,753	2024
D2020	BACKFLOW PREVENTER (3-4 INCHES)	SPRINKLER	1	EA	$10,037	2024
D2020	BACKFLOW PREVENTER (<=1 INCH)	SPRINKLER	1	EA	$901	2024
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	ZOELLER, ELEV PIT	1	EA	$848	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$1,003,845**	

No Projected Component Replacement Cost for Asset No. 1130 for 2025

No Projected Component Replacement Cost for Asset No. 1130 for 2026

No Projected Component Replacement Cost for Asset No. 1130 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



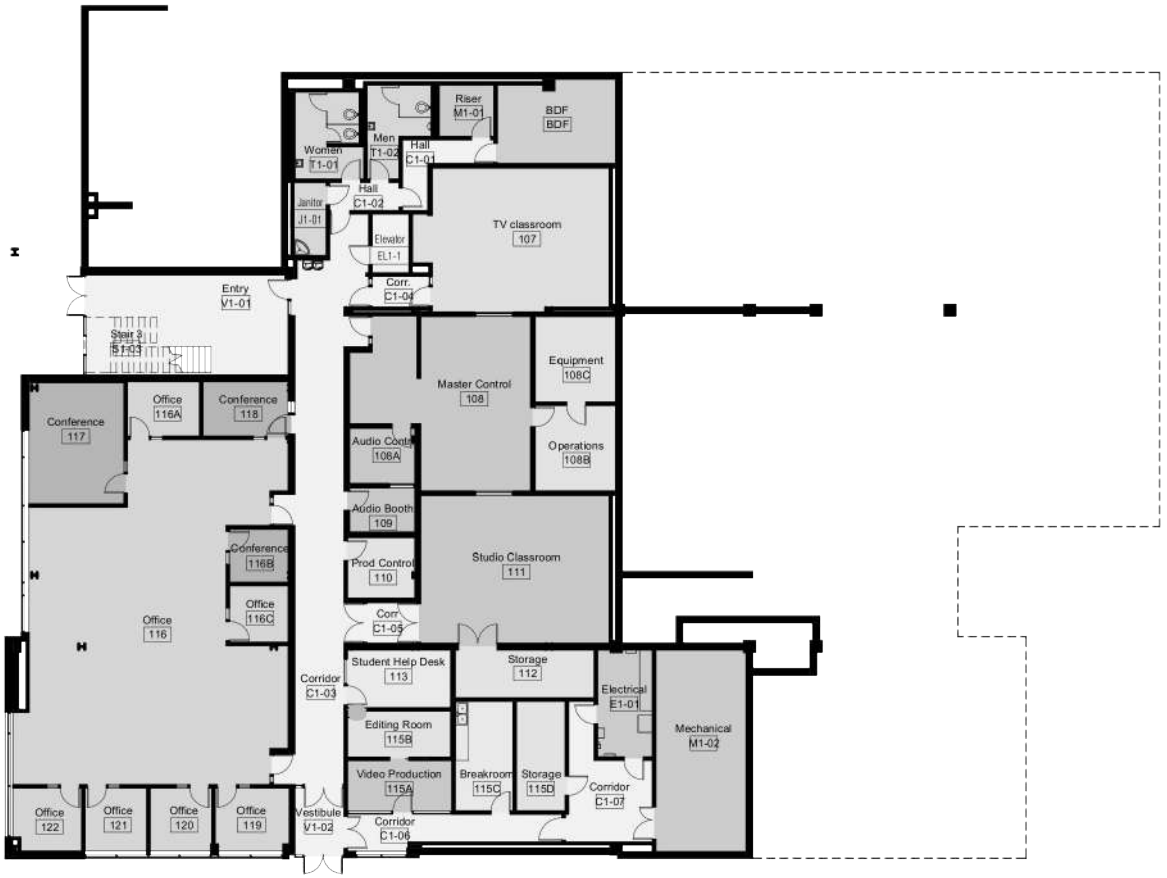
Average Annual Renewal Cost per SF $6.89

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



TECHNOLOGY CLASSROOM BUILDING

BLDG NO. 1130

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 4

PORTLAND COMMUNITY COLLEGE

FS02

TECHNOLOGY CLASSROOM BUILDING

BLDG NO. 1130

ISES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 4

PORTLAND COMMUNITY COLLEGE

PENTHOUSE FLOOR PLAN

FS02

FS02

TECHNOLOGY CLASSROOM BUILDING

BLDG NO. 1130

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

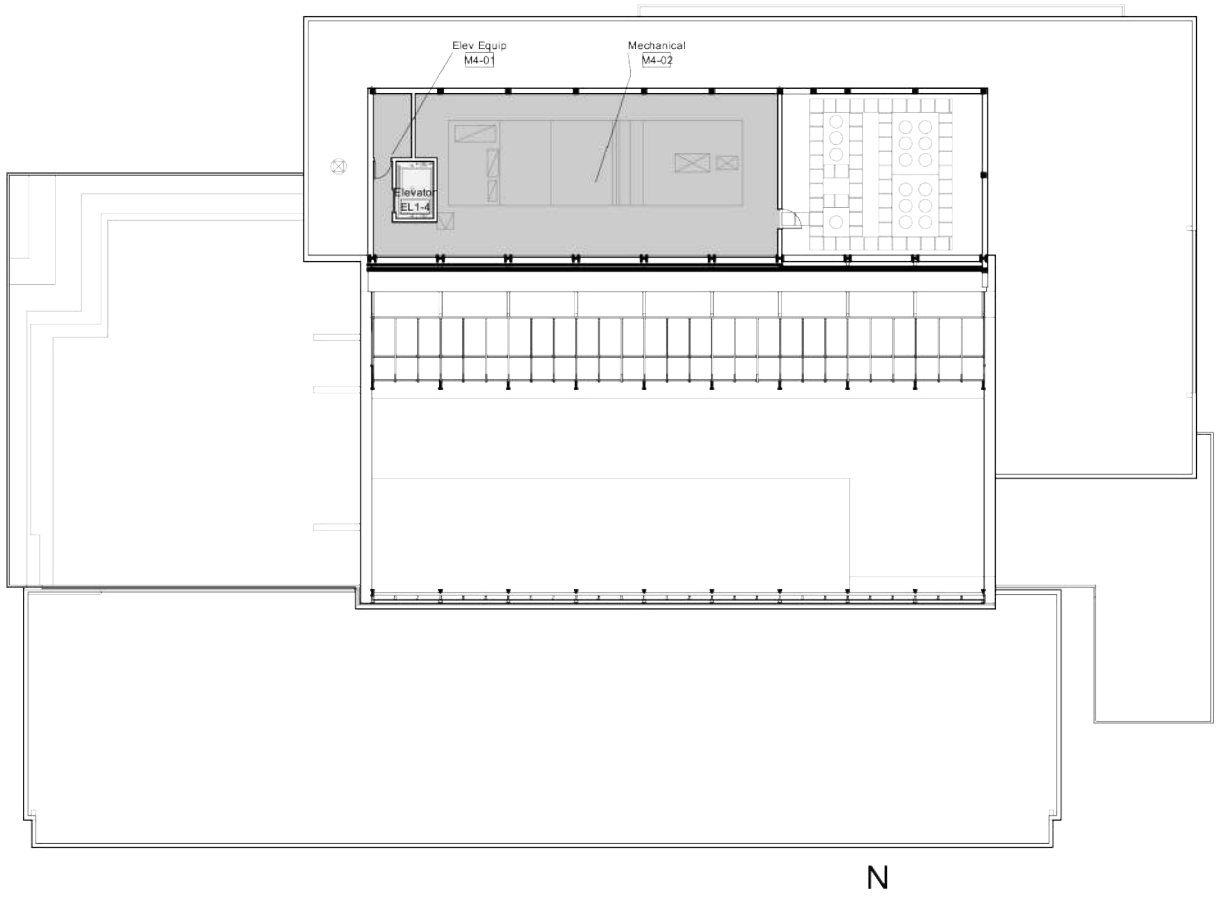
Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.

3 of 4

PORTLAND COMMUNITY COLLEGE



ES01 FS01

TECHNOLOGY
CLASSROOM
BUILDING

BLDG NO. 1130

ISES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/20/2018
Drawn by: A.W.
Project No. 18-064

ROOF
FLOOR
PLAN

Sheet No.
4 of 4

SECTION 6

PHOTOGRAPHS

1130001a 8/21/2018
Accessible elevator control panel
Elevator

1130001e 8/21/2018
Exhaust fan
Roof

1130002a 8/21/2018
Penthouse and roof without fall protection
Roof

1130002e 8/21/2018
Exhaust fan
Roof

1130003a 8/21/2018
Roof drain and overflow drain
Roof

1130003e 8/21/2018
Condensing units
Roof

1130004a 8/21/2018
Penthouse and skylight structures
Roof

1130004e 8/21/2018
Air-cooled chiller
Roof

1130005a 8/21/2018
Penthouse and skylight structures
Roof

1130005e 8/21/2018
Exterior lighting
Roof

1130006a 8/21/2018
Light monitor structure
Roof

1130006e 8/21/2018
Condensing units
Roof

1130007a 8/21/2018
Detail at the light monitor glazing
Roof

1130007e 8/21/2018
Air handling unit
Penthouse, room M4-02

1130008a 8/21/2018
Typical roof membrane condition
Roof

1130008e 8/21/2018
Air handling unit
Penthouse, room M4-02

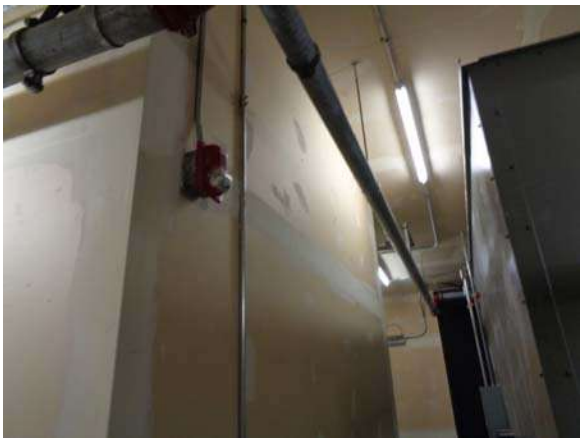
1130009a 8/21/2018
Interior finishes
Penthouse

1130009e 8/21/2018
Unit heater
Penthouse, room M4-02

1130010a 8/21/2018
Unfirestopped penetration at a rated assembly
Penthouse

1130010e 8/21/2018
Panelboard
Penthouse, room M4-02

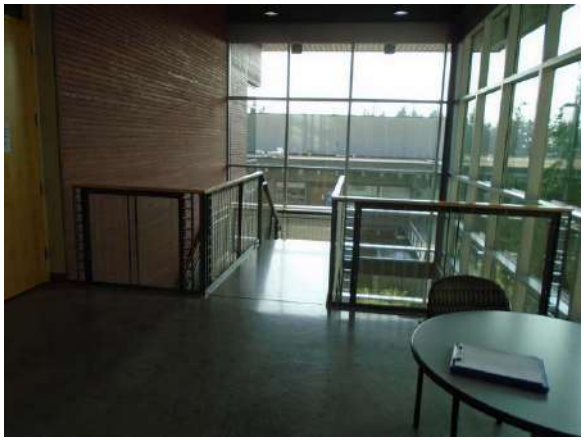
1130011a 8/21/2018
Skylight and light monitor at the atrium space
Third floor



1130011e 8/21/2018
Strobe
Penthouse, room M4-02

1130012a 8/21/2018
Accessible drinking fountains
Third floor

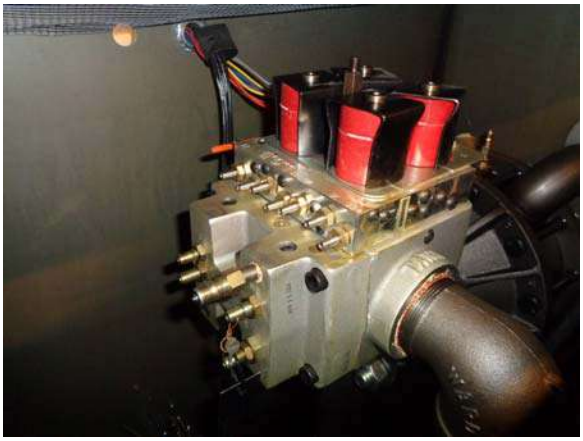
1130012e 8/21/2018
Elevator oil cooler
Penthouse, room M4-01



1130013a 8/21/2018

Stair with compliant railings

Stair #2



1130013e 8/21/2018

Elevator hydraulic valve

Penthouse, room M4-01

1130014a 8/21/2018

Lavatories and area finishes

Room 301

1130014e 8/21/2018

Elevator controller

Penthouse, room M4-01

1130015a 8/21/2018

Urinal, screen, and area finishes

Room 301

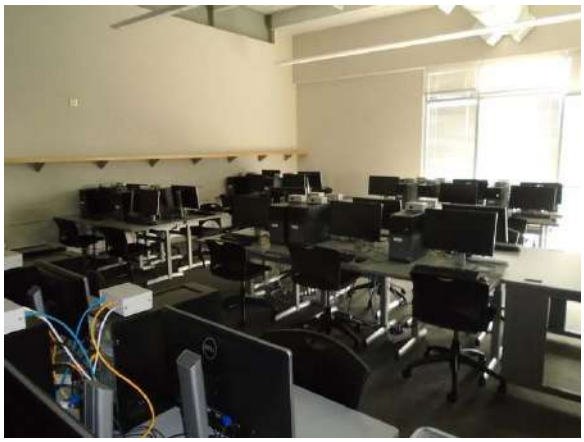
1130015e 8/21/2018

Exhaust fan

Penthouse, room M4-01

1130016a 8/21/2018
Accessible water closet, accessories, and finishes
Room 301

1130016e 8/21/2018
Occupancy sensor and sprinkler head
Third floor, women's restroom



1130017a 8/21/2018
Typical technology classroom finishes
Room 311

1130017e 8/21/2018
Strobe and interior lighting
Third floor, women's restroom

1130018a 8/21/2018
Polished concrete floor with cracks
At Stair 2

1130018e 8/21/2018
Evaporator
Third floor, room 305

1130019a 8/21/2018
Stair and typical wood paneled wall
Atrium

1130019e 8/21/2018
Transformer
Third floor, room 305

1130020a 8/21/2018
Typical office area ceiling finish
Suite 312

1130020e 8/21/2018
Ductwork
Third floor, room 311

1130021a 8/21/2018
Glazing system and office area finishes
Suite 312

1130021e 8/21/2018
Interior lighting
Third floor, room 311

1130022a 8/21/2018

Compliant room signage

Room 315

1130022e 8/21/2018

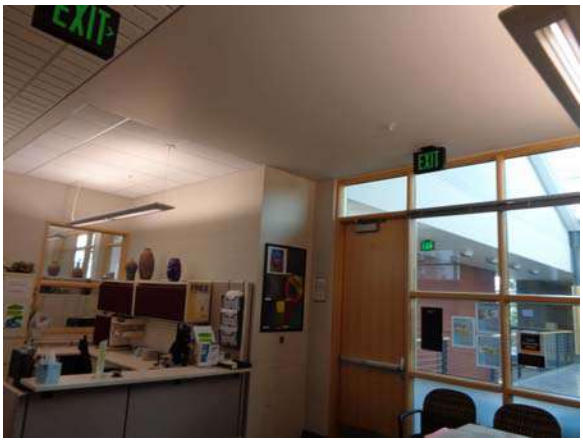
Interior lighting

Third floor, room 312

1130023a 8/21/2018

Casework and sink

Room 315



1130023e 8/21/2018

Exit signage

Third floor, room 312

1130024a 8/21/2018

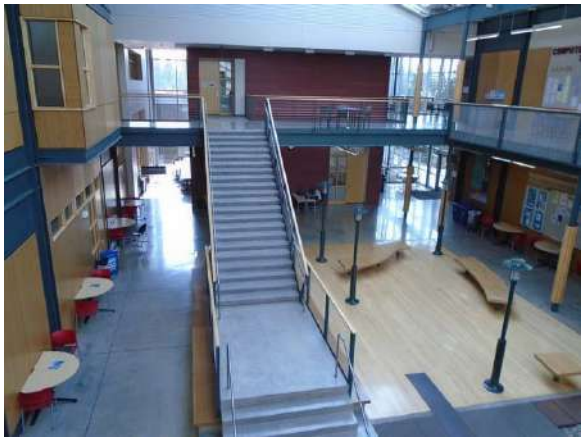
Casework and sink

Room 315

1130024e 8/21/2018

Interior lighting

Third floor, room 315



1130025a 8/21/2018

Atrium stair and finishes

Atrium

1130025e 8/21/2018

Panelboard

Third floor, room E3-01

1130026a 8/21/2018

Classroom finishes

Room 218

1130026e 8/21/2018

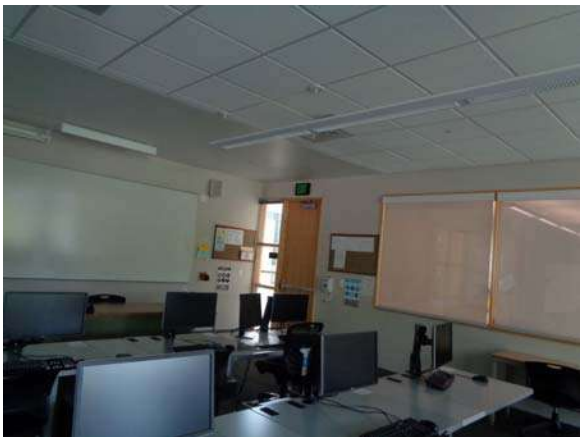
Water heater

Third floor, room J3-01

1130027a 8/21/2018

Elevator door with fire-rated door cover

Second floor



1130027e 8/21/2018

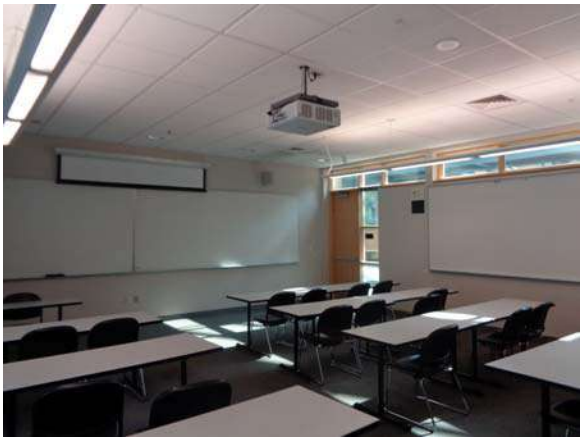
Interior lighting

Third floor, room 308

1130028a 8/21/2018

Utility sink

Room 206



1130028e 8/21/2018

Interior lighting

Second floor, room 212

1130029a 8/21/2018

All-gender restroom with compliant hardware and powered door opener

Room 203

1130029e 8/21/2018

Exterior lighting

Second floor, corridor

1130030a 8/21/2018

Accessible water closet, lavatory, and accessories

Room 203

1130030e 8/21/2018

Interior lighting

Second floor, room 213

1130031a 8/21/2018

Atrium wood wall finish

Second floor

1130031e 8/21/2018

Thermostat

Second floor, room 214

1130032a 8/21/2018

Entrance door and hardware

Stair 3

1130032e 8/21/2018

Water heater

Second floor, room 206

1130033a 8/21/2018

Typical first floor corridor finishes

Corridor 124

1130033e 8/21/2018

Panelboards

Second floor, room 205

1130034a 8/21/2018
Accessible drinking fountains
Corridor 124

1130034e 8/21/2018
Occupancy sensor and sprinkler head
Second floor, restroom

1130035a 8/21/2018
Accessible water closet and accessories
Room 101

1130035e 8/21/2018
Fire alarm panels
First floor, room 106

1130036a 8/21/2018
Standard toilet stall and area finishes
Room 101

1130036e 8/21/2018
Sump pump controller
First floor, room 106

1130037a 8/21/2018
Lavatory, accessories, and finishes
Room 101

1130037e 8/21/2018
Backflow preventer
First floor, room 106

1130038a 8/21/2018
Typical fire-rated door and frame
First floor

1130038e 8/21/2018
Backflow preventer
First floor, room 106

1130039a 8/21/2018
Stair with compliant railings
Stair 3

1130039e 8/21/2018
Compressor
First floor, room 106

1130040a 8/21/2018
Entrance door with hardware and signage
Stair 3

1130040e 8/21/2018
Evaporator
First floor, room 104

1130041a 8/21/2018
Doors with compliant hardware and fire door at the elevator
Corridor 124

1130041e 8/21/2018
Strobe and interior lighting
First floor, room 108

1130042a 8/21/2018
Accessible stall, water closet, and accessories
Room 102

1130042e 8/21/2018
Interior lighting
First floor, room 108

1130043a 8/21/2018
Lavatory and area finishes
Room 102

1130043e 8/21/2018
Interior lighting
First floor, room 116

1130044a 8/21/2018
Urinal, partition, and area finishes
Room 102

1130044e 8/21/2018
Air handling unit
First floor, room 125

1130045a 8/21/2018
Typical work area casework
Room 107

1130045e 8/21/2018
Air handling unit
First floor, room 125

1130046a 8/21/2018
Interior finishes and glazing system
Room 117

1130046e 8/21/2018
Variable frequency drives
First floor, room 125

1130047a 8/21/2018
Typical office area finishes
Room 116

1130047e 8/21/2018
Pump equipment
First floor, room 125

1130048a 8/21/2018
Break area casework and sink
Room 115C

1130048e 8/21/2018
Transformer
First floor, room 105

1130049a 8/21/2018
Break area casework and sink
Room 115C

1130049e 8/21/2018
Switchboard
First floor, room 105

1130050a 8/21/2018
First floor entrance doors and site conditions
South elevation

1130050e 8/21/2018
Automatic transfer switch and panelboard
First floor, room 105

1130051a 8/21/2018
Exterior finishes and site condition
Southwest elevation

1130051e 8/21/2018
Evaporator
First floor, room 105

1130052a 8/21/2018
Building entrance at the second floor
East elevation

1130052e 8/21/2018
Sink
First floor, room 115C

1130053a 8/21/2018
Exterior finishes and site conditions
East elevation

1130053e 8/21/2018
Drain and supply piping
First floor, room 115C

1130054a 8/21/2018
Exterior finishes and site conditions
Northeast elevation

1130054e 8/21/2018
Generator
Site

1130055a 8/21/2018

Exterior finishes at the main entrance

North elevation

1130055e 8/21/2018

Condensing unit

Site

1130056a 8/21/2018

Exterior finishes at the main entrance

North elevation

1130056e 8/21/2018

Condensing unit

Site

1130057a 8/21/2018

Exterior finishes at the ramp from the Campus Center

West elevation

1130057e 8/21/2018

Condensing unit

Site

1130058a 8/21/2018
Exterior finishes at the lower level entrance
West elevation

1130058e 8/21/2018
Exterior lighting
Site

1130059a 8/21/2018
Exterior finishes and site conditions
West elevation

1130059e 8/21/2018
Exterior lighting
Site

1130060a 8/21/2018
Exterior finishes and site conditions
West elevation

1130060e 8/21/2018
Condensing unit
Site

1130061e 8/21/2018
Exterior lighting
Site

1130062e 8/21/2018
Exterior lighting
East elevation

1130063e 8/21/2018
Exterior lighting
North elevation

1130064e 8/21/2018
Exterior lighting
North elevation

1130065e 8/21/2018
Exterior lighting
Site

1130066e 8/21/2018
Exterior lighting
Site

1130067e 8/21/2018

Exterior lighting

Site

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	PORTLAND COMMUNITY COLLEGE
Asset Number	1130
Asset Name	Technology Classroom Building
Year Built or Last Energy Renovation	2004

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

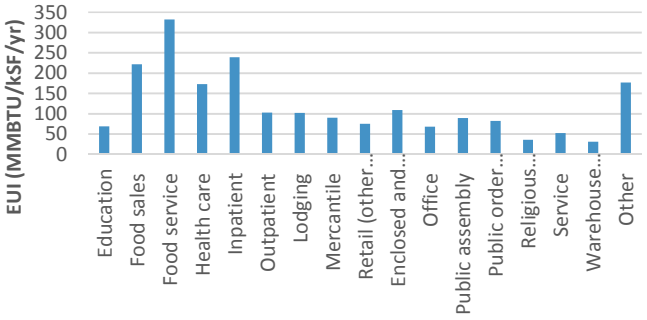
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

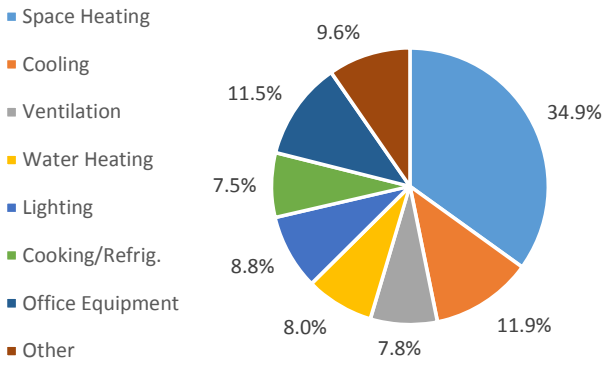


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Building Comfort/Tuning	CONDUCT RETROCOMMISSIONING (RCX). RCx the building to identify and address operating deficiencies, optimize HVAC operations, reduce energy bills, and improve occupant comfort.	CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Center

Facility Condition Assessment

CLIMB Center
Asset 5100

Inspected August 24, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

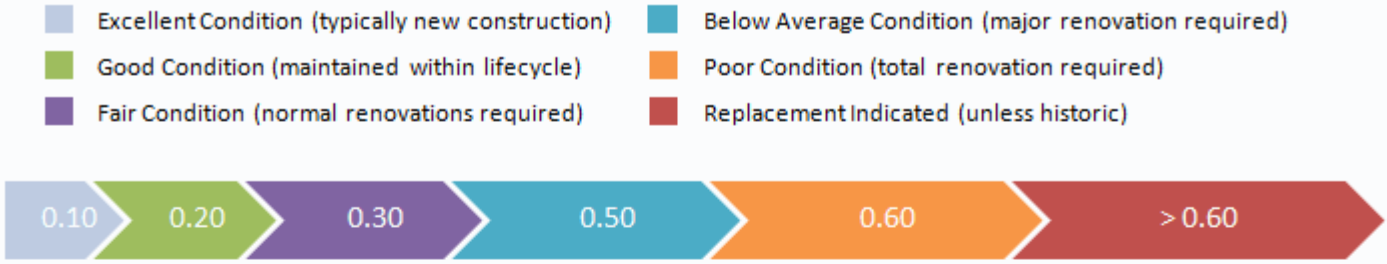
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

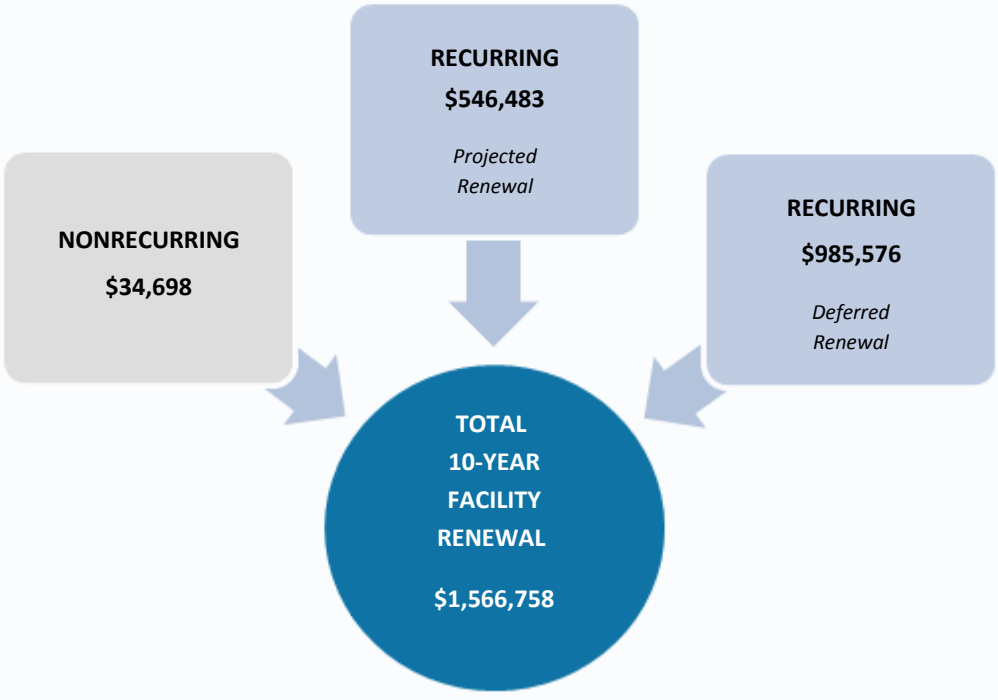
ASSET CODE	5100		
ASSET NAME	CLIMB CENTER	**CURRENT REPLACEMENT VALUE**	$14,874,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.11
YEAR BUILT	1996	**FACILITY CONDITION INDEX**	0.07
GSF	35,646	**10-YEAR $/SF**	43.95
INSPECTION DATE	08/24/2018		

FCNI Scale

The FCNI for this asset is **0.11**



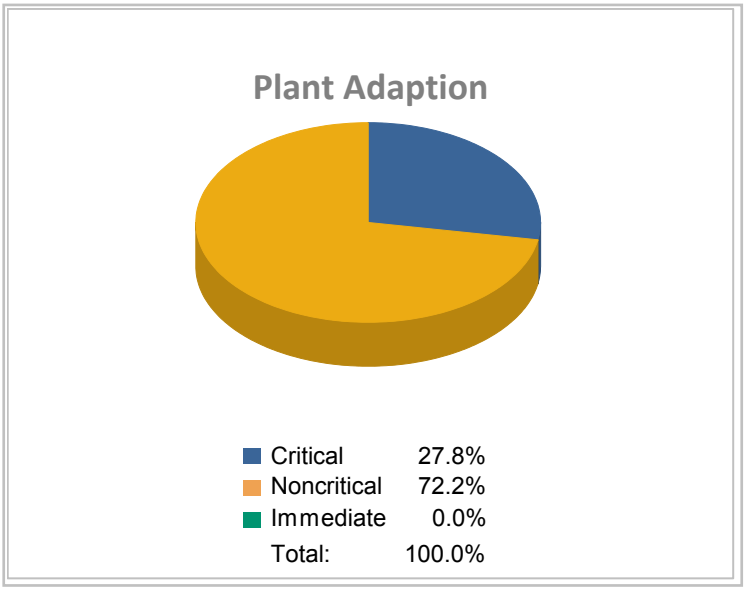
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

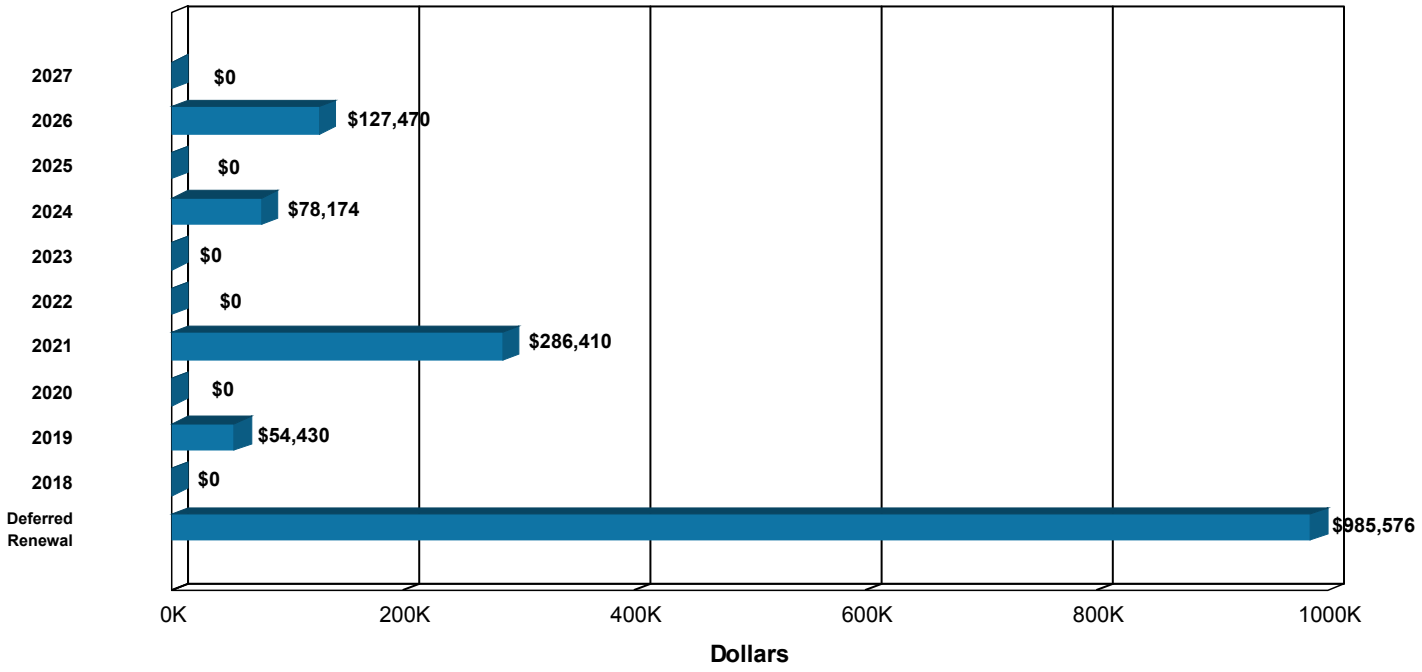
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$9,663**
3 - Noncritical	**$25,035**



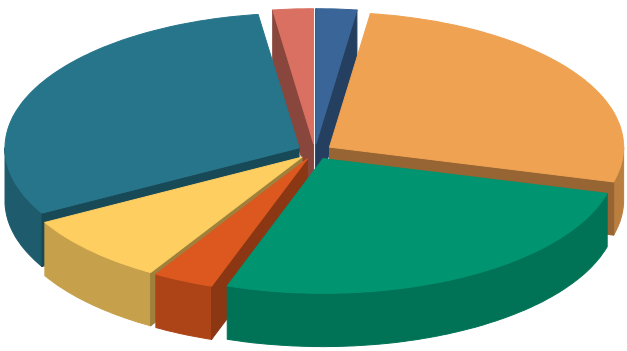
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$34,698	2%
Electrical	$423,488	27%
Exterior	$407,878	26%
Fire/Life Safety	$53,438	3%
Health	$0	0%
HVAC	$131,037	8%
Interiors	$481,940	31%
Plumbing	$34,279	2%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$1,566,758**	

ASSET SUMMARY

Portland Community College operates several campuses as well as several stand-alone classroom buildings in the Portland area. The primary function of the Continuous Learning for Individuals, Management, and Business (CLIMB) Center is to provide continuing and professional education opportunities through programs such as the Institute for Health Professionals, the Small Business Development Center, Professional Development and Training, and Customized Workforce Development and Training as well as other similar programs. The three-story, 35,646 gross square foot building includes an auditorium, classrooms, offices, and support spaces. CLIMB Center was built in 1996 near the Willamette River in the center of downtown Portland.

Information for this report was gathered during a site visit conducted on August 24, 2018.

Site

The CLIMB Center is located at the corner of Southeast Clay Street and Southeast Water Avenue near the center of downtown of Portland Oregon. The site is flat and includes an asphalt parking lot, concrete sidewalks all around the building, and mature, well-developed landscaping that is in good condition. There are no recommendations for changes or improvements to the site.

Exterior Structure

The CLIMB Center has standing-seam metal roofs with an extensive green roof system. The standing-seam metal roof should outlast the scope of this report, but the green roof and a small area of asphaltic roofing on the auditorium have reached the end of their anticipated lifecycles and are recommended for replacement in the next ten years. The majority of the exterior walls are brick veneer and in good condition. Mechanical screen walls and accent areas of metal panel finishes on the exterior are nearing the end of their normal lifecycle and the joints in these systems should be examined for cracked or dried sealants and, where necessary, resealed. The storefront glazing systems are also in good condition. While the flush hollow-metal doors should outlast the scope of this report, the aluminum and glass storefront style doors will reach the end of their anticipated lifecycle in the next ten years and should be replaced. All of the exterior door hardware should be evaluated for replacement within the next few years.

Interior Finishes/Systems

The floor finishes include carpet and sheet vinyl tile which vary in age and condition but all are recommended for replacement within the next ten years. While the painted walls are in good condition, they will likely require repainting within the next ten years. Ceilings are either painted hard surfaces or acoustical tile or perforated metal suspended systems. The ceilings are in good condition and should

outlast the scope of this report. The interior doors as well as the fixed seating in the Auditorium and the casework in break areas are all in good condition and should last beyond the next ten years.

Accessibility

The building provides many currently mandated accessible features such as grade-level entrances, accessible restrooms and drinking fountains, lever-handle door hardware, and compliant signage. The barriers to full accessibility which are noted below should be corrected in the near future.

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountain is a barrier to accessibility and the first floor drinking fountain should be replaced with a dual-level unit. Accessibility legislation also requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The dual-level drinking fountains are otherwise compliant but project more than four inches into the walk path, and should have cane guards or alcove walls added.

Elevator control panels are required to include a hands-free emergency phone. The current emergency phone is covered with a hinged door, which is no longer compliant. Remove the door or replace the phone with a surface-mounted unit.

Knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on the few doors that still have knobs. Doors to permanent spaces where the use is unlikely to change are also required to have signs complying with size, location, and readability standards. Doors meeting this requirement but lacking appropriate signage should have compliant signs added.

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The steps at the side aisles in the auditorium are devoid of supportive handrails. It is recommended that wall-mounted compliant handrails be installed.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

Exit pathways and exit doors are well marked with illuminated exit signs and are clear of obstructions. The roof has a guardrail to provide fall protection for workers on the roof. The elevator is within a structure which provides separation from the rest of the building by means of a fire door. Emergency

lighting is believed to be contained in select overhead fixtures that have battery back-up ballasts. This appears to be an adequate application for the facility.

The facility has a modern, Silent Knight fire alarm system with the main addressable fire alarm panel in room E1-01. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes provide notification. The system appears to provide adequate coverage and is believed to have been installed in 2013 with no recommendations. A Wheellock mass notification panel was also observed and inventoried for information purposes.

The facility is provided fire suppression by an automatic sprinkler system with a small compressor for pressurization. Additional fire suppression is provided by wall-mounted, manual, chemical-type fire extinguishers. The wet portion of the fire suppression system appears to provide adequate coverage and is in good condition. However, the dry portion will reach the end of its service life over the scope of this report and should be upgraded.

HVAC

The facility contains two Trane air-cooled chillers installed in 2013 that provide cooling. The chillers appear to be well maintained and have substantial remaining service life. Heating hot water is provided by two Laars, gas-fired boilers that are new and have substantial remaining service life. A third back-up boiler dates to 1996 and will reach the end of its service life over the scope of this report. A pump and expansion tank support the heating systems. While the pump is in excellent condition with no recommendations, the expansion tank is original and is nearing the end of its service life. Replacement is recommended.

Two indoor air handling units (AHUs) provide tempered air. The Trane units were installed in 1996 and contain hot water coils and chilled water coils. Distribution equipment consists of metal ductwork that is believed to contain variable air volume (VAV) boxes, while the controls are a digital application. The HVAC equipment appears to be an adequate application for this facility, although a partial control upgrade should be anticipated over the scope of this report.

Supplemental cooling for select rooms is provided by three split systems that are charged with DX refrigerant. The split system vary in age and all of the original equipment will reach the end of their service life over the next ten years. Facility exhaust is provided by rooftop centrifugal fans and inline centrifugal fans. The exhaust fans serve restrooms and general exhaust needs. They are in adequate condition and vary in age. Some of the new units were installed in the last five years and have substantial remaining service life. The one original unit should be considered for replacement in the next five years.

Electrical

Power is supplied to the facility at 480/277 volts via underground utilities. A main switchboard is energized for distribution and has a capacity rating of 600 amps. Power is then distributed via a dual-voltage configuration. The 277/480 volt power is distributed to branch transformers that step the power

down to 120/208 volt power. The lighting and major mechanical systems are supported by the 277/480 volt circuit. The panels were manufactured by Square D. The electrical equipment is in good condition and has substantial remaining service life.

The interior lighting consists of lay-in, surface-mount, and suspended fixtures equipped with parabolic, acrylic, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by can-type fixtures with compact fluorescent bulbs. The interior lighting scheme appears to be in good condition and is believed to be original. Based on age, the system has reached lifecycle depletion and should be upgraded in the near future.

Exterior lighting consists of wall-mounted HID fixtures positioned on the exterior of the building or on the roof. Additional lighting is provided by pole-mounted fixtures on the site. The lighting equipment appears to be well maintained and is in good condition. However, some of the fixtures may need to be considered for replacement within the scope of this report.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The units have service to AHUs and return fans. The units were installed at different times and all of the original units have reached the end of their service life.

Plumbing

The domestic water system is supplied through a copper piping network. Backflow preventers on the water system prevent cross contamination. Drain piping is believed to be cast-iron with no hub connections. The piping systems, where they could be viewed, are in adequate condition. Based on age, the piping systems have substantial remaining service life. The backflow preventers, however, have reached the end of their service life and should be replaced.

Domestic hot water is produced by an A.O. Smith commercial-grade electric water heater installed in 2012 with a tank capacity of 80 gallons. A small pump and expansion tank support the water heater. The domestic water heating equipment is in good condition although the expansion tank will reach lifecycle depletion within the next ten years. Additionally, there are several instantaneous water heaters serving select sinks. Due to a short lifecycle, these units should be considered for replacement in the next ten years.

The plumbing fixtures include drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. The urinals, water closets, and utility sinks are within their normal lifecycle and should last another ten or more years. The remaining fixtures should be replaced within the next five years.

Vertical Transportation

The facility has a ThyssenKrupp hydraulic passenger elevator that was upgraded in 2009 to include a new controller and car operating panel. The system serves three floors and has a rated car capacity of 2,500 pounds. The elevator should continue to serve the facility over the next ten years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 24, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	9,663	25,035	0	0	0	0	0	0	0	0	0	0	0	$34,698
EXTERIOR	0	0	0	294,505	0	0	0	89,074	0	0	0	0	24,298	0	$407,878
INTERIOR	0	0	0	258,162	0	0	0	112,226	0	0	16,120	0	95,431	0	$481,940
PLUMBING	0	0	0	9,421	0	2,970	0	20,880	0	0	0	0	1,008	0	$34,279
HVAC	0	0	0	0	0	51,460	0	10,792	0	0	62,053	0	6,733	0	$131,037
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	53,438	0	0	0	0	0	0	$53,438
ELECTRICAL	0	0	0	423,488	0	0	0	0	0	0	0	0	0	0	$423,488
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$9,663	$25,035	$985,576	$0	$54,430	$0	$286,410	$0	$0	$78,174	$0	$127,470	$0	$1,566,758
TOTAL NONRECURRING PROJECT NEEDS			$34,698	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$1,532,060	

CURRENT REPLACEMENT VALUE	$14,874,000
FACILITY CONDITION NEEDS INDEX	0.11
FACILITY CONDITION INDEX	0.07

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
35,646	$1,566,758	$43.95

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$34,698	$0	$34,698
EXTERIOR	$0	$407,878	$407,878
INTERIOR	$0	$481,940	$481,940
PLUMBING	$0	$34,279	$34,279
HVAC	$0	$131,037	$131,037
FIRE/LIFE SAFETY	$0	$53,438	$53,438
ELECTRICAL	$0	$423,488	$423,488
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$34,698**	**$1,532,060**	**$1,566,758**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
5100AC02	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	6,700
5100AC04	ELEVATOR CAB ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	2,963
5100AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	20,663
5100AC03	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	4,372
				TOTAL	**$34,698**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5100	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	ROOF ACCESS			B2030	Deferred Renewal	946
5100	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	PENTHOUSE ACCESS			B2030	Deferred Renewal	5,679
5100	DR36	DOOR PANIC HARDWARE, EXTERIOR	AUDITORIUM EXIT			B2030	Deferred Renewal	1,187
5100	DR36	DOOR PANIC HARDWARE, EXTERIOR	ENTRANCES			B2030	Deferred Renewal	4,748
5100	RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH				B3010	Deferred Renewal	45,671
5100	RR27	ROOF - GREEN COVERING OVER MEMBRANE				B3010	Deferred Renewal	236,274
5100	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	1996			C3020	Deferred Renewal	258,162
5100	FX04	PLUMBING FIXTURE - SINK, KITCHEN				D2010	Deferred Renewal	6,180
5100	BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		M4-03	D2020	Deferred Renewal	1,006
5100	BF02	BACKFLOW PREVENTER (1-2 INCHES)	WATTS		M1-02	D2020	Deferred Renewal	2,235
5100	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RET FAN ASU-2		M4-04	D5010	Deferred Renewal	3,633
5100	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-1	0000009335	M4-02	D5010	Deferred Renewal	7,904
5100	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-2		M4-04	D5010	Deferred Renewal	7,904
5100	LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	D5020	Deferred Renewal	3,754
5100	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				D5020	Deferred Renewal	400,293
5100	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		308A	D2020	2019	990

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5100	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		101	D2020	2019	990
5100	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		114F	D2020	2019	990
5100	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2019	33,604
5100	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2019	17,856
5100	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				B2010	2021	73,963
5100	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ROOF ACCESS			B2030	2021	3,022
5100	DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ENTRANCES			B2030	2021	12,089
5100	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2021	112,226
5100	DF01	DRINKING FOUNTAIN, DUAL-LEVEL				D2010	2021	5,388
5100	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				D2010	2021	15,492
5100	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	0000003320	M4-2	D3030	2021	1,946
5100	HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	0000003321	M4-2	D3030	2021	1,946
5100	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	STAIRWELL ROOF	0000003410	ROOF	D3040	2021	6,899
5100	FS02	FIRE SPRINKLER SYSTEM - DRY		0000003409		D4010	2021	53,438
5100	IF04	FLOORING - VINYL SHEET, STANDARD				C3020	2024	16,120
5100	BL26	BOILER - GAS (800-1500 MBH)	RAYPAK	0000003333	M4-03	D3020	2024	62,053

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5100	EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL				B2010	2026	24,298
5100	DR26	DOOR PANIC HARDWARE, INTERIOR				C1020	2026	30,861
5100	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014			C3020	2026	64,570
5100	TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL		J2-01	D2020	2026	1,008
5100	HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	CARRIER	0000006401	E4-01	D3030	2026	2,524
5100	HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	CARRIER	0000009345	107	D3030	2026	2,524
5100	TK23	EXPANSION TANK, STL PT (50-450 GAL)		0000003327	M4-03	D3040	2026	1,684
							TOTAL	**$1,532,060**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	5100AC02	AUDITORIUM ACCESSIBILITY UPGRADES	2	$6,700
2	5100AC04	ELEVATOR CAB ACCESSIBILITY UPGRADES	2	$2,963
3	5100AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$20,663
4	5100AC03	INTERIOR DOOR ACCESSIBILITY UPGRADES	3	$4,372
		TOTAL FOR PLANT ADAPTION		**$34,698**
		GRAND TOTAL:		**$34,698**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	5100AC02	2	Plant Adaption	AUDITORIUM ACCESSIBILITY UPGRADES	$6,700
2	5100AC04	2	Plant Adaption	ELEVATOR CAB ACCESSIBILITY UPGRADES	$2,963
3	5100AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$20,663
4	5100AC03	3	Plant Adaption	INTERIOR DOOR ACCESSIBILITY UPGRADES	$4,372
				TOTAL FOR ACCESSIBILITY	**$34,698**
				GRAND TOTAL:	**$34,698**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	5100AC02	**Category Code:** AC3B	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/28/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1028.13	Not Applicable	Room Only: Floor(s) 1
ADAAG	505		

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The steps at the side aisles in the auditorium are devoid of supportive handrails. It is recommended that wall-mounted compliant handrails be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system, painted	LF	44	$64.33	$2,831	$45.09	$1,984	$4,814
Base Material/Labor Costs				**$2,831**		**$1,984**	
Indexed Material/Labor Costs				**$2,814**		**$2,000**	**$4,813**
Construction Mark Up at 20.0%							**$963**
Original Construction Cost							**$5,776**
Date of Original Estimate: 10/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$5,776**
							$924
TOTAL PROJECT COST							**$6,700**

All costs shown as Present Value

ELEVATOR CAB ACCESSIBILITY UPGRADES

Project Number:	5100AC04	**Category Code:** AC3A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/8/2018	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	407.4.9	Not Applicable	Item Only: Floor(s) 1
ASME	A17.1		

Description

Accessibility legislation requires that goods and services offered in buildings be generally accessible to all persons. The elevator is only partially compliant with current ADA legislation. It is recommended that a compliant, hands-free phone be installed or that the door over the existing phone be removed in order meet the current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, hands-free elevator emergency telephone	EA	1	$1,227	$1,227	$902	$902	$2,129
			Base Material/Labor Costs	**$1,227**		**$902**	
			Indexed Material/Labor Costs	**$1,219**		**$909**	**$2,129**
					Construction Mark Up at 20.0%		**$426**
					Original Construction Cost		**$2,554**
Date of Original Estimate:	11/8/2018				**Inflation**		**$0**
					Current Year Construction Cost		**$2,554**
					Professional Fees at 16.0%		**$409**
					TOTAL PROJECT COST		**$2,963**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	5100AC01	**Category Code:** AC3F	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/28/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1,2,3

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountains is a barrier to accessibility. The first floor single-level drinking fountain should be replaced with a dual-level unit. Accessibility legislation also requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. While the dual-level drinking fountains are otherwise compliant, they are missing the required guards and should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	3	$932	$2,797	$3,321	$9,964	$12,761
			Base Material/Labor Costs	**$4,346**		**$10,441**	
			Indexed Material/Labor Costs	**$4,320**		**$10,524**	**$14,844**
					Construction Mark Up at 20.0%		**$2,969**
					Original Construction Cost		**$17,813**
Date of Original Estimate: 10/28/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$17,813**
							$2,850
					TOTAL PROJECT COST		**$20,663**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	5100AC03	**Category Code:** AC3C	
Priority Sequence:	4		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/28/2018	**Element:**	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4, 703.1	Not Applicable	Floor-wide: Floor(s) P

Description

Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. Knob actuated door hardware is a barrier to accessibility. To comply with the intent of this legislation, it is recommended that lever handle hardware be installed on all doors that still have knobs. Additionally, doors to permanent spaces where the use is unlikely to change are also required to have signs complying with size, location, and readability standards. Doors meeting this requirement but lacking appropriate signage should have compliant signs added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, commercial-grade door hardware	EA	5	$387	$1,935	$155	$775	$2,710
ADA-compliant signage	EA	5	$67.64	$338	$19.89	$99	$438
Base Material/Labor Costs				**$2,273**		**$874**	
Indexed Material/Labor Costs				**$2,259**		**$881**	**$3,141**
Construction Mark Up at 20.0%							**$628**
Original Construction Cost							**$3,769**
Date of Original Estimate: 10/28/2018						**Inflation**	**$0**
Current Year Construction Cost							**$3,769**
Professional Fees at 16.0%							**$603**
TOTAL PROJECT COST							**$4,372**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW04	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL				1,840	SF	$24,298	1996	30		2026
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				2,760	SF	$73,963	1996	25		2021
WN05	GLASS, STOREFRONT				4,610	SF	$738,035	1996	40		2036
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ENTRANCES			4	LEAF	$12,089	1996	25		2021
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ROOF ACCESS			1	LEAF	$3,022	1996	25		2021
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	AUDITORIUM EXIT			1	LEAF	$2,007	1996	40		2036
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PENTHOUSE ACCESS			6	LEAF	$12,039	1996	40		2036
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	PENTHOUSE ACCESS			6	EA	$5,679	1996	12	9	DR
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	ROOF ACCESS			1	EA	$946	1996	12	9	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	ENTRANCES			4	EA	$4,748	1996	12	9	DR
DR36	DOOR PANIC HARDWARE, EXTERIOR	AUDITORIUM EXIT			1	EA	$1,187	1996	12	9	DR
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH				3,150	SF	$45,671	1996	20	1	DR
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM				4,048	SF	$69,166	1996	40		2036
RR27	ROOF - GREEN COVERING OVER MEMBRANE				4,100	SF	$236,274	1996	20	1	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				44	LEAF	$97,303	1996	60		2056
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			8	LEAF	$29,348	1996	60		2056

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			26	LEAF	$95,382	1996	60		2056
DR03	DOOR - OVERHEAD, INTERIOR	FOLDING WALL			200	SF	$20,838	1996	45		2041
DR03	DOOR - OVERHEAD, INTERIOR	FOLDING WALL			200	SF	$20,838	1996	45		2041
DR03	DOOR - OVERHEAD, INTERIOR	FOLDING WALL			200	SF	$20,838	1996	45		2041
DR03	DOOR - OVERHEAD, INTERIOR	FIRE SHUTTER			300	SF	$31,257	1996	45		2041
DR03	DOOR - OVERHEAD, INTERIOR	FIRE SHUTTER			32	SF	$3,334	1996	45		2041
DR03	DOOR - OVERHEAD, INTERIOR	FIRE SHUTTER			40	SF	$4,168	1996	45		2041
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED DRS			44	EA	$33,128	1996	35		2031
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			8	EA	$6,023	1996	35		2031
DR26	DOOR PANIC HARDWARE, INTERIOR				26	EA	$30,861	1996	30		2026
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS	150	LF	$84,132	2009	30		2039
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			BREAK RMS	190	LF	$106,567	2009	30		2039
SF01	SEATING, FIXED, FOLDING, STANDARD				100	EA	$35,262	1996	40		2036
IW01	WALL FINISH - APPLIED, STANDARD				40,210	SF	$112,226	2009	12		2021
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	1996			21,670	SF	$258,162	1996	12	9	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014			5,420	SF	$64,570	2014	12		2026

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IF04	FLOORING - VINYL SHEET, STANDARD				1,430	SF	$16,120	2009	15		2024
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	TILES			22,070	SF	$245,643	1996	45		2041
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	PERFORATED METAL			2,570	SF	$34,714	1996	45		2041
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	WOOD AUDITORIUM			1,030	SF	$13,913	1996	45		2041
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				2,850	SF	$7,954	2009	24		2033
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	THYSSEN KRUPP	0000004387	M1-01	1	EA	$257,984	2009	25		2034
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	$5,388	1996	25		2021
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				18	EA	$15,492	1996	25		2021
FX04	PLUMBING FIXTURE - SINK, KITCHEN				8	EA	$6,180	1996	20	1	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				3	EA	$4,993	1996	50		2046
FX10	PLUMBING FIXTURE - URINAL				6	EA	$6,472	1996	35		2031
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				18	EA	$30,509	1996	35		2031
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS		M4-03	1	EA	$1,006	1996	20	1	DR
BF02	BACKFLOW PREVENTER (1-2 INCHES)	WATTS		M1-02	1	EA	$2,235	1996	20	1	DR
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				35,646	SF	$408,178	1996	50		2046
TK06	EXPANSION TANK, STL PT (<20 GAL)	AMTROL		J2-01	10	GAL	$1,008	1996	30		2026

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WH13	WATER HEATER - COMMERCIAL, ELECTRIC (70-90 GAL)	AO SMITH	0000009360	J2-01	80	GAL	$12,774	2012	30		2042
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		308A	1	EA	$990	2009	10		2019
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		101	1	EA	$990	2009	10		2019
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		114F	1	EA	$990	2009	10		2019
PD02	DRAIN PIPING SYSTEM - CLASSROOM				35,646	SF	$612,409	1996	60		2056
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	SPRINKLER	0000009333	M4-03	1	HP	$2,282	2013	25		2038
BL25	BOILER - GAS (410-800 MBH)	LAARS	0000006399	M4-03	500	MBH	$26,087	2013	28		2041
BL25	BOILER - GAS (410-800 MBH)	LAARS	0000006400	M4-03	500	MBH	$26,087	2013	28		2041
BL26	BOILER - GAS (800-1500 MBH)	RAYPAK	0000003333	M4-03	1,124	MBH	$62,053	1996	28		2024
CH08	CHILLER - AIR COOLED PACKAGE (35-75 TONS)	ACCU-1	0000009359	M4-01	40	TON	$75,427	2013	30		2043
CH08	CHILLER - AIR COOLED PACKAGE (35-75 TONS)	ACCU-2	0000009356	M4-05	40	TON	$75,427	2013	30		2043
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000003444	M4-4	2	TON	$2,473	2013	25		2038
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	0000003320	M4-2	1	TON	$1,946	1996	25		2021
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	0000003321	M4-2	1	TON	$1,946	1996	25		2021
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	CARRIER	0000006401	E4-01	1	TON	$2,524	1996	30		2026
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	CARRIER	0000009345	107	1	TON	$2,524	1996	30		2026

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000006712	MDF	2	TON	$2,510	2013	30		2043
AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	ASU-1	0000003324	M4-02	20	HP	$122,893	1996	35		2031
AH09	AIR HANDLING UNIT - INDOOR (17-23 HP)	ASU-2	0000009357	M4-04	20	HP	$122,893	1996	35		2031
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	STAIRWELL ROOF	0000003410	ROOF	1	EA	$6,899	1996	25		2021
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-1	0000006398	M4-01	1	EA	$6,899	2013	25		2038
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-2	0000006402	M4-05	1	EA	$6,899	2013	25		2038
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LOREN COOK	0000006398	M4-02	7	HP	$9,893	1996	35		2031
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	LOREN COOK	0000006402	M4-04	5	HP	$6,604	1996	35		2031
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				35,646	SF	$1,268,078	1996	45		2041
PH01	PUMP - ELECTRIC (<=10 HP)	HWP	0000003328	M4-03	1	HP	$2,539	2004	30		2034
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009361	J2-01	1	HP	$846	2012	30		2042
TK23	EXPANSION TANK, STL PT (50-450 GAL)		0000003327	M4-03	50	GAL	$1,684	1996	30		2026
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				35,646	SF	$120,761	2009	20		2029
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				35,646	SF	$33,604	2009	10		2019
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				35,646	SF	$17,856	2009	10		2019
FS01	FIRE SPRINKLER SYSTEM - WET				32,126	SF	$434,621	1996	80		2076

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FS02	FIRE SPRINKLER SYSTEM - DRY		0000003409		3,520	SF	$53,438	1996	25		2021
FA01	FIRE ALARM SYSTEM - DEVICES		0014406706	E1-01	35,646	SF	$153,208	2013	18		2031
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	0014406706	E1-01	1	EA	$2,254	2013	18		2031
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		E1-01	1	EA	$2,254	2013	18		2031
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				35,646	SF	$885,200	1996	50		2046
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	MDL	0000003339	E4-01	600	AMP	$47,259	1996	40		2036
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	RET FAN ASU-2		M4-04	5	HP	$3,633	1996	15	6	DR
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	RET FAN ASU-1	0000009334	M4-02	7	HP	$4,956	2017	15		2032
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-1	0000009335	M4-02	20	HP	$7,904	1996	16	5	DR
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-2		M4-04	20	HP	$7,904	1996	16	5	DR
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			4	EA	$3,086	2013	20		2033
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT		ROOF	5	EA	$3,858	2013	20		2033
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	3	EA	$5,843	1996	40		2036
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	3	EA	$3,754	1996	20	1	DR
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				35,646	SF	$400,293	1996	20	1	DR

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$7,998,411				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	PENTHOUSE ACCESS	6	EA	$5,679	DR
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	ROOF ACCESS	1	EA	$946	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	ENTRANCES	4	EA	$4,748	DR
B2030	DOOR PANIC HARDWARE, EXTERIOR	AUDITORIUM EXIT	1	EA	$1,187	DR
B3010	ROOF - GREEN COVERING OVER MEMBRANE		4,100	SF	$236,274	DR
B3010	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH		3,150	SF	$45,671	DR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	1996	21,670	SF	$258,162	DR
D2010	PLUMBING FIXTURE - SINK, KITCHEN		8	EA	$6,180	DR
D2020	BACKFLOW PREVENTER (<=1 INCH)	WATTS	1	EA	$1,006	DR
D2020	BACKFLOW PREVENTER (1-2 INCHES)	WATTS	1	EA	$2,235	DR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-1	20	HP	$7,904	DR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-2	20	HP	$7,904	DR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	RET FAN ASU-2	5	HP	$3,633	DR
D5020	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM		3	EA	$3,754	DR
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM		35,646	SF	$400,293	DR
		TOTAL DEFERRED RENEWAL COST			**$985,576**	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 5100 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		35,646	SF	$18,391	2019
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		35,646	SF	$34,612	2019
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,020	2019
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,020	2019
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,020	2019
	2019	**PROJECTED COMPONENT REPLACEMENT COST**			**$56,063**	

No Projected Component Replacement Cost for Asset No. 5100 for 2020

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		40,210	SF	$122,633	2021
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ENTRANCES	4	LEAF	$13,210	2021
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	ROOF ACCESS	1	LEAF	$3,302	2021
B2010	WALL, EXTERIOR, PANEL JOINT RESTORATION		2,760	SF	$80,821	2021

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2010	DRINKING FOUNTAIN, DUAL-LEVEL		2	EA	$5,888	2021
D2010	PLUMBING FIXTURE - LAVATORY, COUNTER		18	EA	$16,928	2021
D4010	FIRE SPRINKLER SYSTEM - DRY		3,520	SF	$58,393	2021
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	STAIRWELL ROOF	1	EA	$7,539	2021
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	1	TON	$2,127	2021
D3030	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CARRIER	1	TON	$2,127	2021
2021		**PROJECTED COMPONENT REPLACEMENT COST**			**$312,968**	

No Projected Component Replacement Cost for Asset No. 5100 for 2022

No Projected Component Replacement Cost for Asset No. 5100 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - VINYL SHEET, STANDARD		1,430	SF	$19,249	2024
D3020	BOILER - GAS (800-1500 MBH)	RAYPAK	1,124	MBH	$74,095	2024
2024		**PROJECTED COMPONENT REPLACEMENT COST**			**$93,343**	

No Projected Component Replacement Cost for Asset No. 5100 for 2025

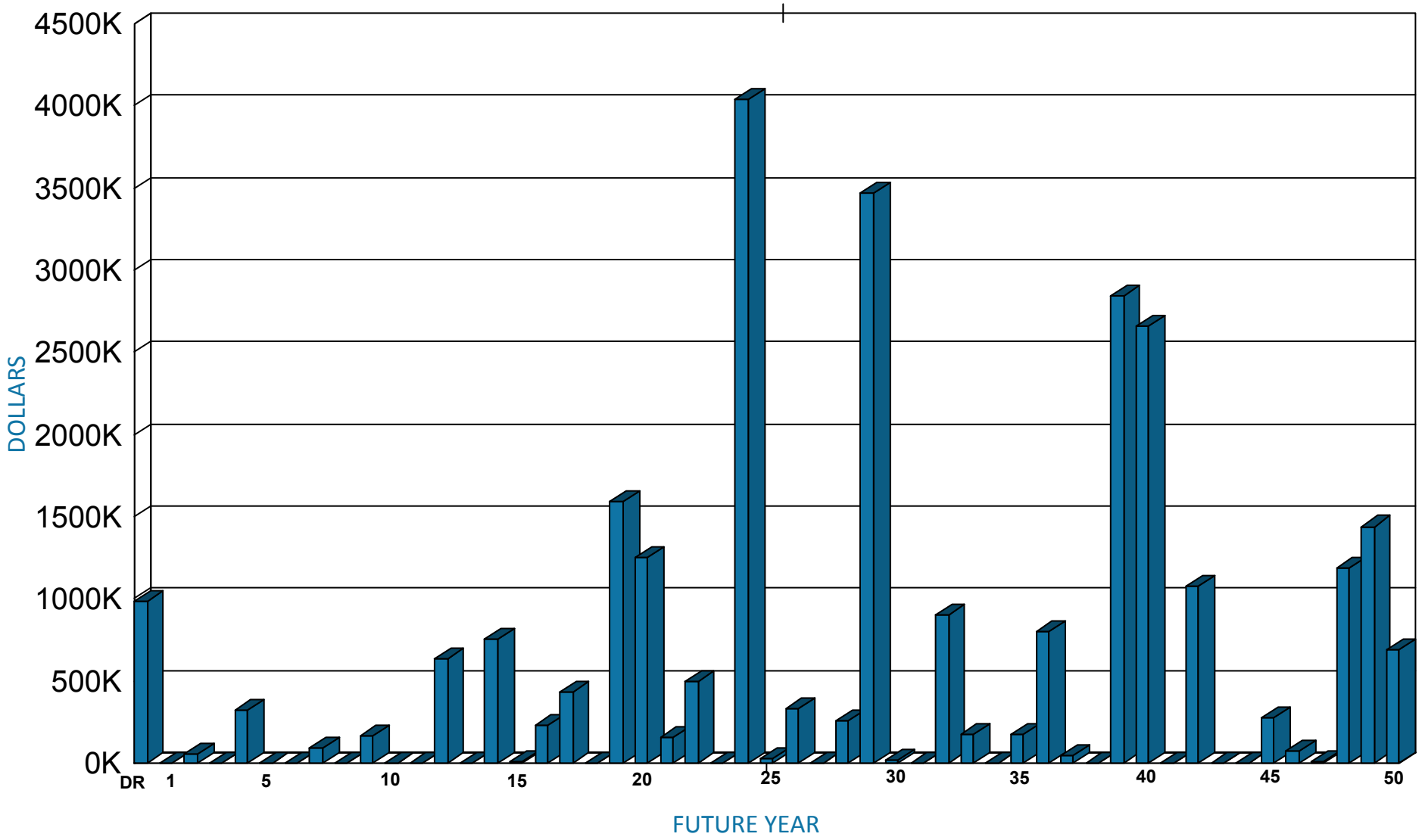
COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD	2014	5,420	SF	$81,796	2026
C1020	DOOR PANIC HARDWARE, INTERIOR		26	EA	$39,094	2026
B2010	WALL, EXTERIOR, SIDING, METAL, HORIZONTAL OR VERTICAL		1,840	SF	$30,780	2026
D3030	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	CARRIER	1	TON	$3,198	2026
D3030	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	CARRIER	1	TON	$3,198	2026
D3040	EXPANSION TANK, STL PT (50-450 GAL)		50	GAL	$2,133	2026
D2020	EXPANSION TANK, STL PT (<20 GAL)	AMTROL	10	GAL	$1,277	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$161,475**	

No Projected Component Replacement Cost for Asset No. 5100 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



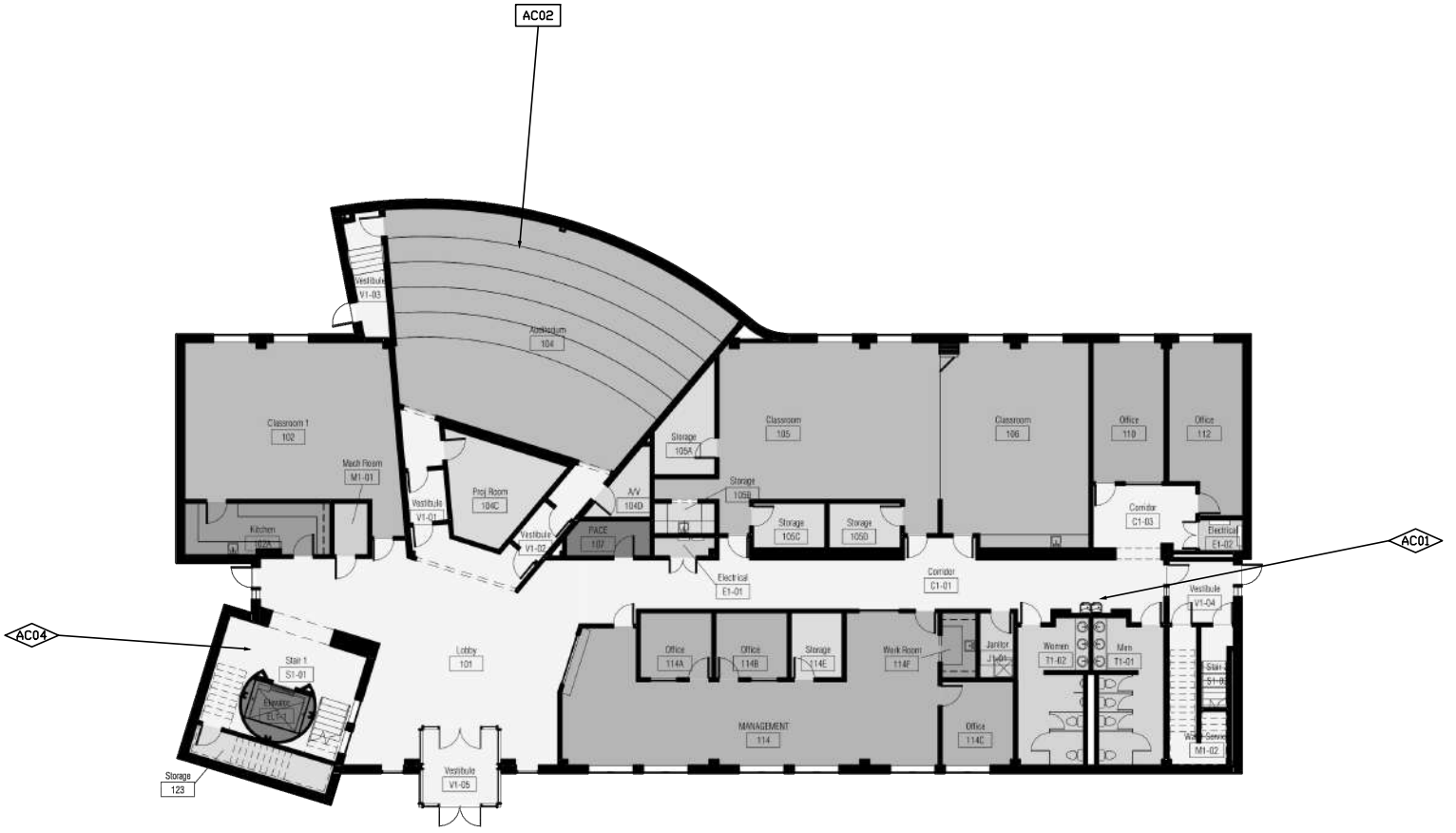
Average Annual Renewal Cost per SF $6.74

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



CLIMB CENTER

BLDG NO. 5100

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/14/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 4

PORTLAND COMMUNITY COLLEGE

CLIMB CENTER

BLDG NO. 5100

BES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 4

PORTLAND COMMUNITY COLLEGE

CLIMB CENTER

BLDG NO. 5100

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

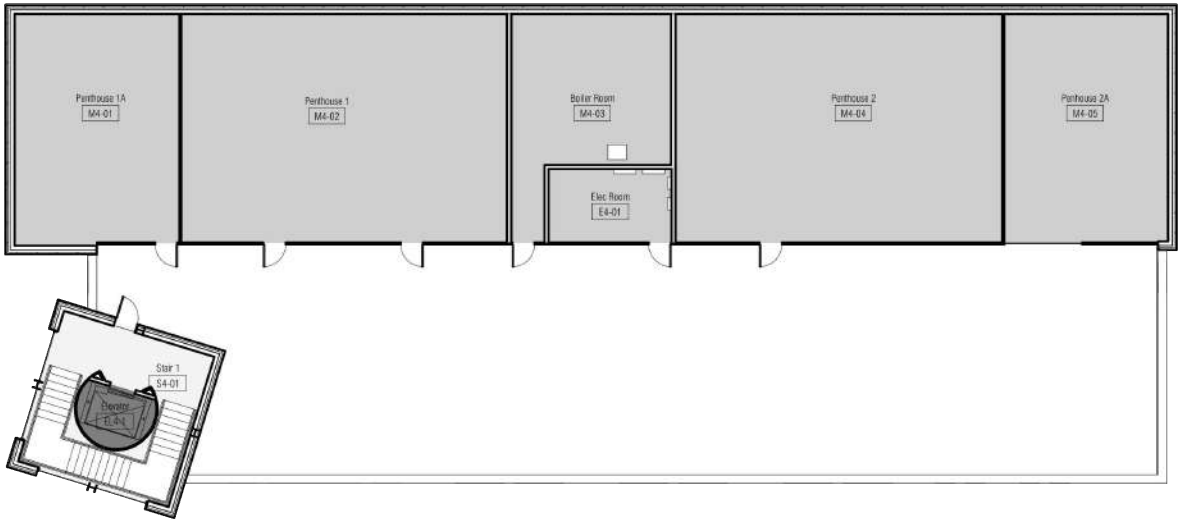
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 4

PORTLAND COMMUNITY COLLEGE



AC03

CLIMB
CENTER

BLDG NO. 5100

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER
APPLIES TO
ONE ROOM ONLY

PROJECT NUMBER
APPLIES TO
ONE ITEM ONLY

PROJECT NUMBER
APPLIES TO
ENTIRE BUILDING

PROJECT NUMBER
APPLIES TO
ENTIRE FLOOR

PROJECT NUMBER
APPLIES TO A SITUATION
OF UNDEFINED EXTENTS

PROJECT NUMBER
APPLIES TO AREA
AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

PENTHOUSE
FLOOR
PLAN

Sheet No.
4 of 4

SECTION 6

PHOTOGRAPHS

5100001a 8/24/2018

Green roof and walk pads

Roof

5100001e 8/24/2018

Car operating panel

Elevator cab

5100002a 8/24/2018

Guardrail and green roof

Roof

5100002e 8/24/2018

Exhaust fan

Roof

5100003a 8/24/2018

Roof drain

Roof

5100003e 8/24/2018

Air-cooled chiller

Roof

5100004a 8/24/2018

Mechanical screen wall

Roof

5100004e 8/24/2018

Exterior lighting

Roof

5100005a 8/24/2018

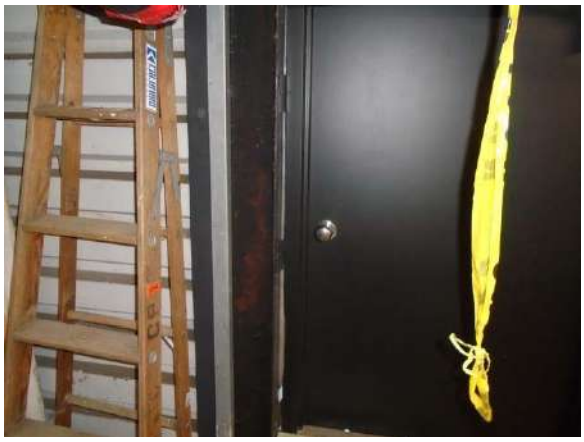
Mechanical screen wall

Roof

5100005e 8/24/2018

Exterior lighting

Roof



5100006a 8/24/2018

Penthouse door with noncompliant hardware

Penthouse

5100006e 8/24/2018

Condensing unit

Roof, room M4-04

5100007a 8/24/2018

Penthouse interior and access door

Penthouse

5100007e 8/24/2018

Air handling unit

Roof, room M4-04

5100008a 8/24/2018

Roof access at stairway 1

Roof

5100008e 8/24/2018

Variable frequency drive

Roof, room M4-04

5100009a 8/24/2018

Penthouse roof

Roof

5100009e 8/24/2018

Evaporator

Roof, room E4-01

5100010a 8/24/2018
Stair with compliant handrails
Stair 1

5100010e 8/24/2018
Panelboards
Roof, room E4-01

5100011a 8/24/2018
Elevator shaft exterior finish
Stair 1

5100011e 8/24/2018
Panelboards
Roof, room E4-01

5100012a 8/24/2018
Detail at the stair tower glazing system
Stair 1

5100012e 8/24/2018
Compressor and standpipe
Roof, room M4-03

5100013a 8/24/2018

Stairwell entrance with fire shutter

Stair 1

5100013e 8/24/2018

Expansion tank

Roof, room M4-03

5100014a 8/24/2018

Typical door hardware and signage

Lobby C3-01

5100014e 8/24/2018

Boiler

Roof, room M4-03

5100015a 8/24/2018

Typical corridor finishes

Third floor

5100015e 8/24/2018

Boilers

Roof, room M4-03

5100016a 8/24/2018

Accessible water closet and accessories

Room T3-01

5100016e 8/24/2018

Unit heater

Roof, room M4-03

5100017a 8/24/2018

Urinals and screen

Room T3-01

5100017e 8/24/2018

HVAC control panels

Roof, room M4-02

5100018a 8/24/2018

Restroom door with powered door opener

Room T3-01

5100018e 8/24/2018

Condensing units

Roof, room M4-02

5100019a 8/24/2018

Lavatories and area finishes

Room T3-01

5100019e 8/24/2018

Air handling unit

Roof, room M4-02

5100020a 8/24/2018

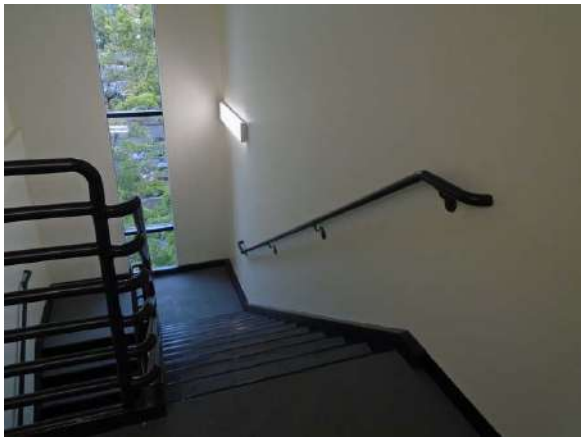
Accessible drinking fountains without required side protection

Corridor C3-02

5100020e 8/24/2018

Variable frequency drive

Roof, room M4-02



5100021a 8/24/2018

Stair with compliant railings

Stair 2

5100021e 8/24/2018

Piping

Roof, room M4-02

5100022a 8/24/2018

Elevator door with compliant signage

Stair 1

5100022e 8/24/2018

Exhaust fan

Roof

5100023a 8/24/2018

Elevator control panel with noncompliant covered emergency phone

Elevator

5100023e 8/24/2018

Air-cooled chiller

Roof

5100024a 8/24/2018

Work area casework

Room 301

5100024e 8/24/2018

Pull station and interior lighting

Third floor, corridor

5100025a 8/24/2018

Fire shutter and service counter

Room 308

5100025e 8/24/2018

Interior lighting

Third floor, room 308

5100026a 8/24/2018

Sink and casework

Room 308c

5100026e 8/24/2018

Water heater

Third floor, room 308A

5100027a 8/24/2018

Typical fire-rated door and frame

Room 308

5100027e 8/24/2018

Interior lighting

Third floor, room 308B

5100028a 8/24/2018

Utility sink

Room J3-01

5100028e 8/24/2018

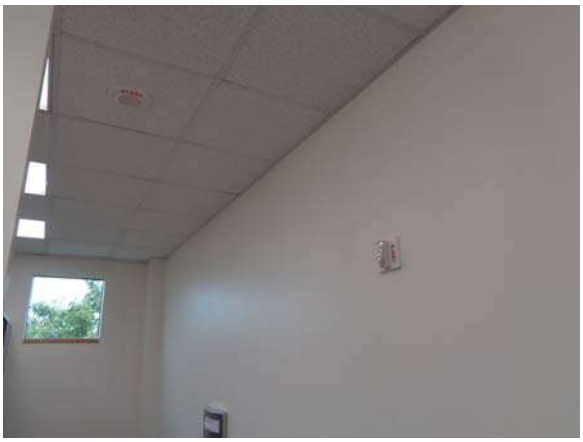
Panelboard

Third floor, electrical room

5100029a 8/24/2018

Water damaged ceiling tile

Room J3-01



5100029e 8/24/2018

Strobe

Third floor, men's restroom

5100030a 8/24/2018

Door without required signage

Room J3-01

5100030e 8/24/2018

Cabinet heater

Third floor, stairwell

5100031a 8/24/2018

Typical building glazing system

Corridor C2-02

5100031e 8/24/2018

Interior lighting

Second floor, corridor

5100032a 8/24/2018

Accessible water closet and accessories

Room T2-01

5100032e 8/24/2018

Water heater

Second floor, room J2-01

5100033a 8/24/2018

Lavatories and area finishes

Room T2-01

5100033e 8/24/2018

Pump equipment

Second floor, room J2-01

5100034a 8/24/2018

Casework and sink

Room 204

5100034e 8/24/2018

Evaporator

Second floor, room MDF

5100035a 8/24/2018

Lobby at the main stairwell

Lobby C2-01

5100035e 8/24/2018

Digital thermostat

Second floor, room MDF

5100036a 8/24/2018

Typical classroom finishes

Room 201

5100036e 8/24/2018

Interior lighting

Second floor, room 204

5100037a 8/24/2018

Work area casework

Room 201

5100037e 8/24/2018

Interior lighting

Second floor, room 201

5100038a 8/24/2018

Auditorium area roof

North elevation

5100038e 8/24/2018

Smoke detector and interior lighting

Second floor, corridor

5100039a 8/24/2018

Casework and sink

Kitchen 102A

5100039e 8/24/2018

Water heater

First floor, room 101

5100040a 8/24/2018
Auditorium exit with powered door opener
Auditorium 104

5100040e 8/24/2018
Sink and interior lighting
First floor, room 102

5100041a 8/24/2018
Auditorium seating and finishes
Auditorium 104

5100041e 8/24/2018
Interior lighting
First floor, room 104

5100042a 8/24/2018
Auditorium tiered seating without required aisle handrails
Auditorium 104

5100042e 8/24/2018
Elevator machine and controller
First floor, elevator machine room

5100043a 8/24/2018
Main lobby entrance, door hardware, and exit signage
Lobby 101

5100043e 8/24/2018
Safepath panels
First floor, telephone room

5100044a 8/24/2018
Main lobby ceiling
Lobby 101

5100044e 8/24/2018
Evaporator
First floor, telephone room

5100045a 8/24/2018
Main first floor corridor finishes
Corridor C1-01

5100045e 8/24/2018
Fire alarm panel
First floor, telephone room

5100046a 8/24/2018
Casework with nonaccessible sink
Room 105B

5100046e 8/24/2018
Interior lighting
First floor, room 105

5100047a 8/24/2018
Folding wall
Room 105

5100047e 8/24/2018
Piping
First floor, room 106

5100048a 8/24/2018
Nonaccessible drinking fountain without side protection
Corridor C1-01

5100048e 8/24/2018
Electrical disconnect switch
First floor, electrical room

5100049a 8/24/2018
Accessible service counter
Lobby 101

5100049e 8/24/2018
Exit sign/emergency light
First floor, corridor

5100050a 8/24/2018
Fire shutter at the service counter
Lobby 101

5100050e 8/24/2018
Water heater
First floor, room 114

5100051a 8/24/2018
Site conditions at main entrance
South elevation

5100051e 8/24/2018
Exterior lighting
Site

5100052a 8/24/2018

Main entrance

South elevation

5100052e 8/24/2018

Exterior lighting

Site

5100053a 8/24/2018

Exterior finishes and site conditions at the main entrance

South elevation

5100053e 8/24/2018

Exterior lighting

North elevation

5100054a 8/24/2018

Stair tower

South elevation

5100054e 8/24/2018

Exterior lighting

North elevation

5100055a 8/24/2018
Exterior finishes and site conditions
West elevation

5100055e 8/24/2018
Exterior lighting
North elevation

5100056a 8/24/2018
Exterior finishes and site conditions
West elevation

5100056e 8/24/2018
Exterior lighting
East elevation

5100057a 8/24/2018
Exterior finishes and site conditions
North elevation

5100058a 8/24/2018
Exterior finishes and site conditions
North elevation

5100059a 8/24/2018
Exterior finishes and site conditions
North elevation

5100060a 8/24/2018
Exterior finishes and site conditions at the parking lot entrance
East elevation

5100061a 8/24/2018
Exterior finishes and site conditions
East elevation

5100062a 8/24/2018
Exit door and site conditions
East elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	5100
Asset Name	CLIMB Center
Year Built or Last Energy Renovation	1996

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

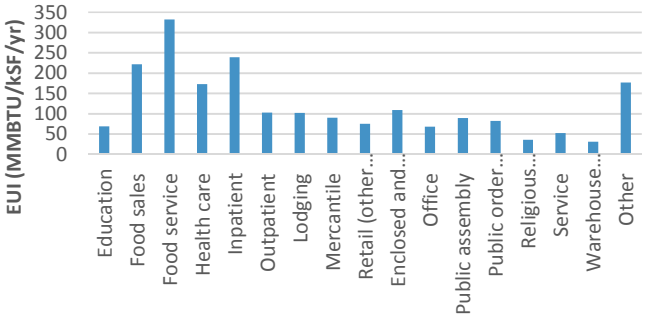
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

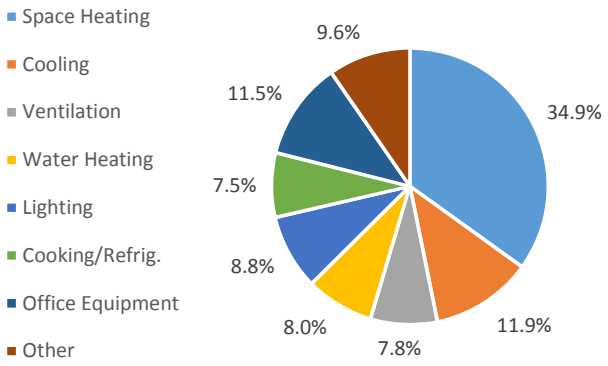


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Exhaust Ventilation	INSTALL ENERGY RECOVERY SYSTEM. Energy Recovery Ventilation (ERV) systems exchange heat between outgoing exhaust air and the incoming outdoor air. Investigate the feasibility of installing an ERV system to pre-heat/cool ventilation air.	LC/NC; CAP
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Centers

Facility Condition Assessment

PCC Downtown Center
Asset 5200

Inspected August 30, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

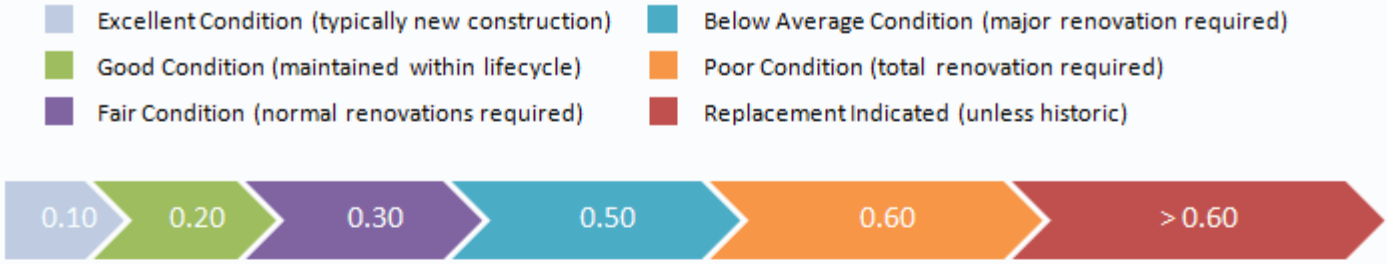
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

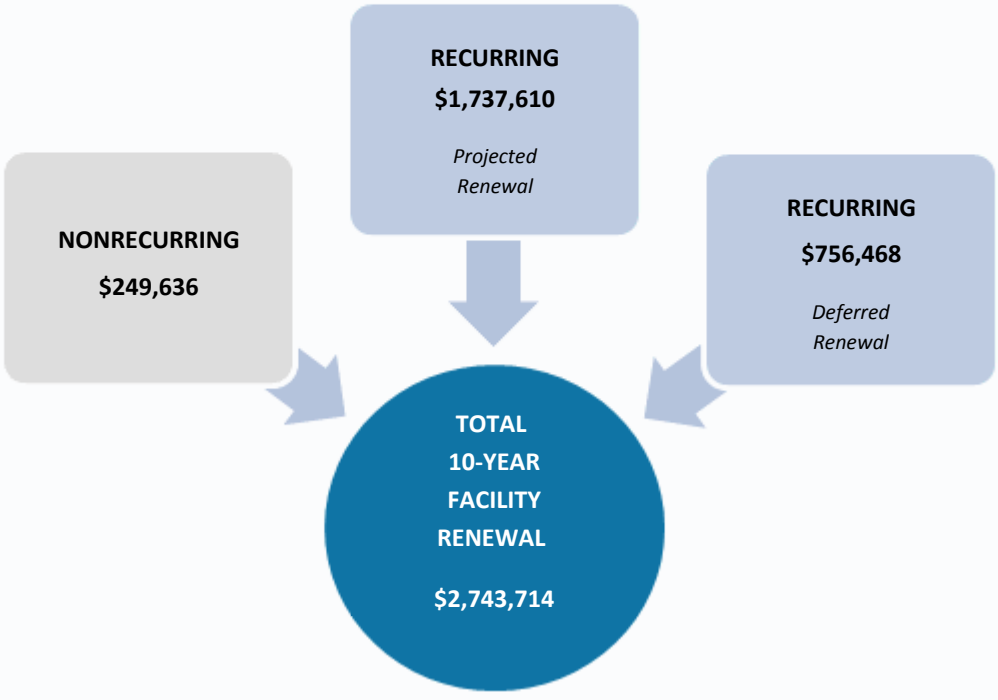
ASSET CODE	5200		
ASSET NAME	PCC DOWNTOWN CENTER	**CURRENT REPLACEMENT VALUE**	$17,610,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.16
YEAR BUILT	1880	**FACILITY CONDITION INDEX**	0.04
GSF	43,595	**10-YEAR $/SF**	62.94
INSPECTION DATE	08/30/2018		

FCNI Scale

The FCNI for this asset is **0.16**



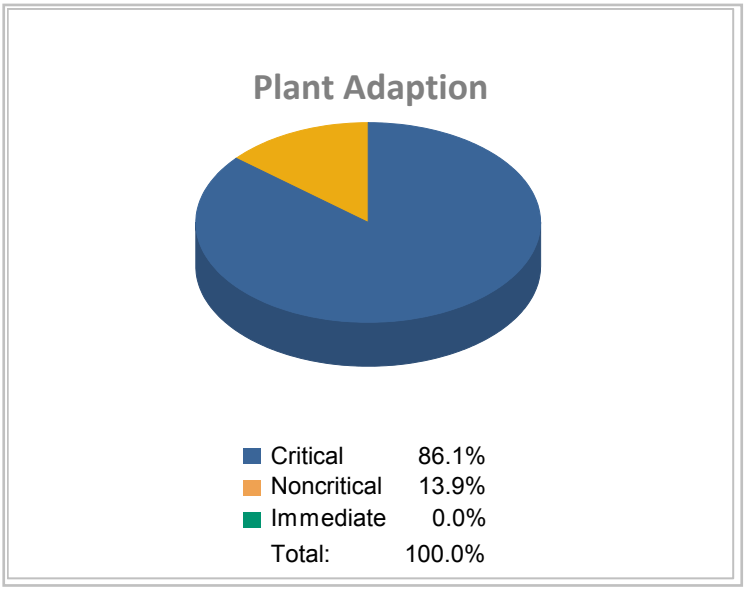
Total Facility Renewal Costs



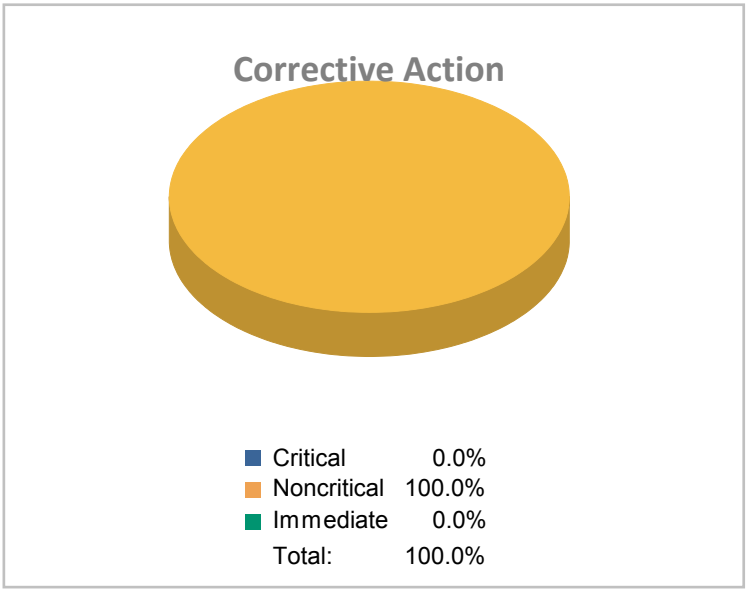
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$54,293**
3 - Noncritical	**$8,762**

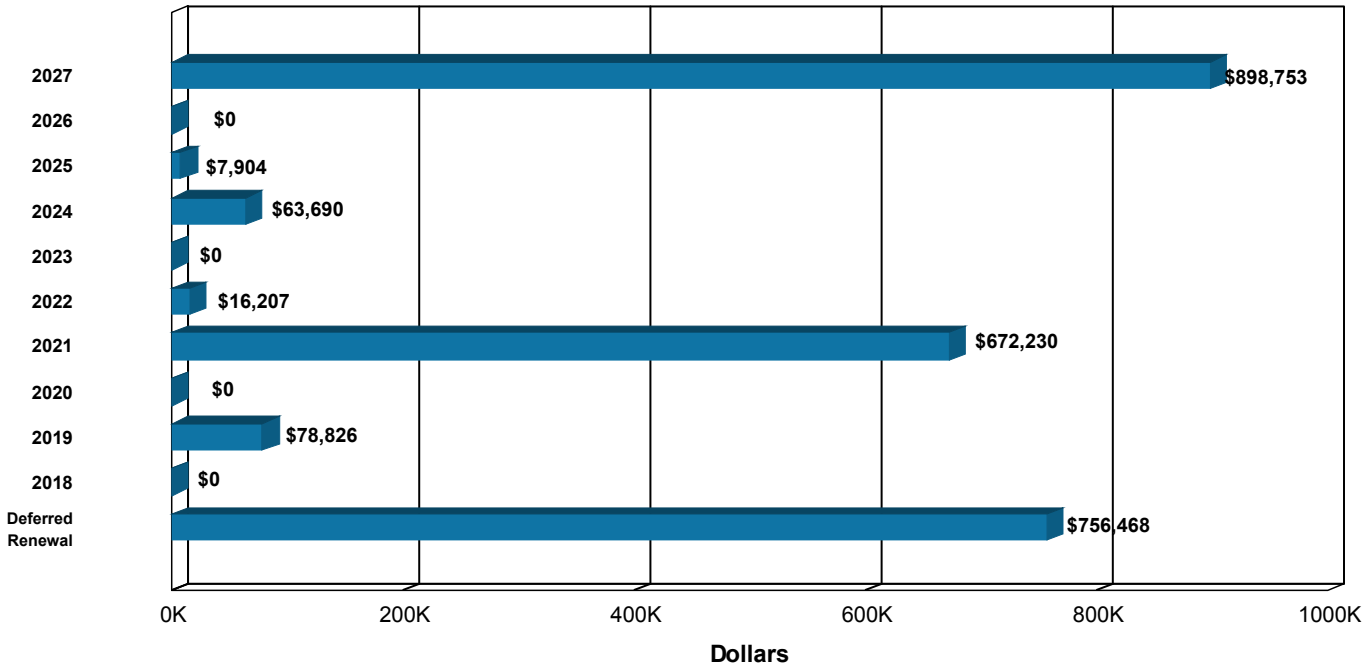


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$186,581**

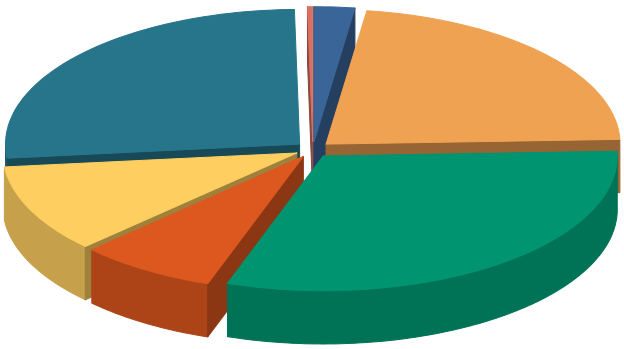


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$63,055	2%
Electrical	$611,141	22%
Exterior	$843,924	31%
Fire/Life Safety	$201,230	7%
Health	$0	0%
HVAC	$291,672	11%
Interiors	$724,288	26%
Plumbing	$8,406	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$2,743,714**	

ASSET SUMMARY

Constructed in 1880, the Downtown Center is part of the Portland Community College system in Portland, Oregon. The 43,595 square feet of area is divided between four above ground levels and a full basement. The upper four levels are dedicated to office and support spaces and the basement is reserved mostly for mechanical and storage areas. The building underwent a major renovation in 2009-2010 and the exterior concrete facade and TPO roof upgraded during this time are in good condition.

Information for this report was gathered during an on-site visit conducted on August 30, 2018.

Site

Situated in an urban area, the building has a limited number of planters along the streets on the west and south elevations that contain ornamental trees. The building is contiguous with two nonuniversity buildings on the north and east and is serviced by a small parking structure to the northeast. The parking structure is not included in this report. No site work appears to be needed at this time.

Exterior Structure

The roof is a flat TPO system with a single large glass and aluminum skylight and a small elevator mechanical room. In good condition, there are no recommendations for the next ten years. The southern and western painted concrete and brick walls appear to be in excellent condition. Yearly maintenance should suffice to maintain these finishes for the scope of this report. However, due to the urban environment, consideration should be given to repainting these surfaces during the latter years of this report timeframe. Also, the brick wall on the northeastern corner of the building is in poor condition and was not included in the recent renovation. This brick exterior wall finish is timeworn and damaged and needs extensive repair. Restore the exterior masonry finishes to include restoration or replacement of units, cleaning, and repointing. Match any new masonry units and pointing to the existing systems as best as possible. Application of a penetrating sealant is recommended.

The exterior doors were either refinished or upgraded during the recent renovation and are structurally sound and appear to be well maintained. The exterior glazing is a mixture of wood-framed, single-pane units and modern energy-efficient, dual-pane systems. It can be anticipated that the exterior door hardware will need to be replaced in the next ten years and all of the older wood-framed, single-pane windows will need to be scheduled for near-term replacement. Replace them with windows that retain similar profiles to the original units but incorporate modern energy-efficient features. Replacement of the window trim will also necessary as part of the overall effort.

Interior Finishes/Systems

Flooring throughout the building consists of carpet, vinyl tile, ceramic tile, laminate, and sealed concrete. The carpet and vinyl tile are in satisfactory in condition. However, the lifecycle of carpet is dependent on building conditions and usage. The high visibility, high traffic nature of this facility tends to reduce the average lifecycle. To maintain an acceptable interior appearance, replace timeworn, stained, or damaged carpet with new commercial-grade finishes as required. The ceramic tile in the restrooms and the laminate for the interior stairs is in excellent condition with no recommended upgrades in the next ten years. The sealed concrete in the basement and southeast stair, along with the rubber in the western stair, are currently in satisfactory condition. However, as with the carpet, the high traffic may necessitate refinishing during the purview of this report.

The interior walls are mainly painted and while they appear to be in good condition, wall maintenance is a cyclical activity and they should be repainted within the next ten years. Durable applications are recommended. The restrooms walls are ceramic tile and in satisfactory condition with no recommended upgrades at this time. The ceiling applications throughout the building are acoustical tile and painted finishes. These finishes are in excellent condition and should outlast the ten-year scope of this report with only minimum required maintenance or concern.

Casework and related countertops are generally in good condition showing signs of normal use. The interior doors are typical wood and metal-framed design and fire rated according to the code requirements for these systems. Panic hardware is installed at all principle interior egress points and stairway protective assemblies. All of the interior door systems and casework are typically suitable for ten or more additional years of service given normal maintenance.

Accessibility

The recent renovation of this facility included several accessible features. The building is accessible from grade at the main entrances which have a power assist door opener. The interior spaces appear to allow wheelchair access to all public spaces. A compliant elevator provides access to each level were one can find accessible restrooms, lever door hardware, and Braille signage. However, the follow concerns were noted during the on-site inspection and should be addressed during any future renovation or facility upgrade to help remove additional issues and ensure a barrier free environment.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades. Additionally, there is no cane barrier protection for the low overhead under the interior lobby staircase. Appropriate cane barriers should be installed in each area that has an overhead obstacle less than 80 inches.

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountain on the first floor is a barrier to accessibility. This drinking fountains should be replaced with a dual-level unit that is properly recessed or protected by cane barriers.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures are connected to the emergency power grid and illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The Silent Knight addressable fire alarm control panel is in room B003. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears to be adequate, in working condition, and serviced regularly. However, based on normal life expectancy and anticipated parts support obsolescence for this class of equipment, an upgrade is recommended within the latter years of the reporting purview. The system should be capable of meeting the requirements of the latest NFPA, ADA, and UL fire system standards.

This facility is also fully protected by a wet-pipe automated fire suppression system with frangible glass-bulb sprinkler heads. The relatively long-lived system was updated in 2009, it appears to be in good condition and is anticipated to provide reliable service beyond the scope of this report, given normal testing, inspection and maintenance is completed as required per NFPA 25.

HVAC

The primary sources of heating, cooling, and ventilation are provided by a single-zone, variable volume, four-pipe air handling unit (AHU), DX split system, ductwork, and a direct digital control (DDC) system. The terminal assembly components of the DDC system should provide approximately 20 years of service. However, the DDC components such as the software and field panels have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns. Updating these specific elements of the DDC should enhance facility maintenance and energy efficiencies and take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set points where not already employed.

A gas-fired boiler generates heating hot water. A modular water-cooled chiller and BAC counter-flow cooling tower generate chilled water for the single AHU. The hydronic heating and cooling media are

distributed to the AHU coils by circulation pumps to provide the bulk of conditioned tempered air. VAV units with electric heat provide local temperature control for most spaces. Multiple DX split systems address supplemental HVAC requirements. Two plate-frame heat exchangers allow the chiller to be placed in standby when lower HVAC loads are experienced. An enthalpy wheel with desiccant beads works to reduce humidity levels in the basement and increases the overall efficiency of the system. The AHU and about ten percent of the HVAC distribution components are early 1980s vintage and due for replacement. The remainder of the HVAC components, including the building exhaust fans, were updated in 2009 and should provide suitable service over the reporting tenure.

Electrical

Power from the local power authority is fed to the ITE switchgear in basement room B003. The 120/208 volt switchgear has a rated capacity of 2,500 amps. Power is then fed to the secondary electrical distribution network for mechanical, lighting, and general purpose loads. Approximately ten percent of the secondary electrical network was installed in 1982 along with the main switchgear. The rest of the electrical system was modernized in 2009 with Eaton Cutler-Hammer equipment. No modernization is anticipated over the next ten years.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve the majority of HVAC equipment and were updated between 2004 and 2009. The drives will reach the end of their statistical life expectancy within the reporting window. Replacement is recommended to avoid potential parts obsolescence and potential operational concerns that result from an undesired failure. This planned approach will likely provide additional energy savings, promote equipment lifecycles, and deliver advanced technological capabilities afforded by devices that are more modern.

Lighting throughout the facility consists of T8, T5, and CFL fixtures updated in 2009 as part of the large renovation effort. Recessed HID fixtures illuminate the main building entrance. Although the current fixtures and lamps would presumably provide reliable service over the reporting tenure, upgrading to LED lighting over the next ten years will lower future operational and maintenance expenditures, increase traditional lifecycle expectations for the lighting system, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Emergency electrical service is provided by a 10 kVA, 120/208 volt UPS. The unit provides power to egress illumination fixtures during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed by rigid copper piping. Where observable, sanitary waste, vent, and stormwater piping is cast-iron. Approximately ten percent of the piping is original. Both the supply and drain piping networks are in working condition with no discrepancies noted by facility personnel. The piping should continue to provide adequate service over the reporting timeline. A residential, gas-fired

domestic water heater provides domestic hot water for bathrooms and break rooms. Two backflow preventer valves (BFPs) service the fire suppression and domestic water systems. The valves protect the public water system from cross contamination and generally have a 20-year lifecycle if tested and maintained properly. The fire BFP was installed in 1982 and is recommended for replacement.

The plumbing fixtures consist of tankless water closets, urinals, lavatories, showers, kitchen sinks, and janitorial sinks. The plumbing fixtures will continue to serve the building well throughout the ten-year scope of this report.

Vertical Transportation

A traction passenger elevator serves the facility. The unit has a 2,500 pound capacity and transits five floors. The unit consists of a 1967 Dover geared machine and an MCE controller modernized by Otis Elevator in 2004. While detailed elevator testing and inspection is not included in this assessment effort, the systems observed were in working condition and operating properly on the day of inspection. No further modernization is anticipated over the reporting period.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 30, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	54,293	8,762	0	0	0	0	0	0	0	0	0	0	0	$63,055
EXTERIOR	0	0	186,581	650,461	0	0	0	6,882	0	0	0	0	0	0	$843,924
INTERIOR	0	0	0	0	0	27,456	0	665,349	0	0	31,483	0	0	0	$724,288
PLUMBING	0	0	0	8,406	0	0	0	0	0	0	0	0	0	0	$8,406
HVAC	0	0	0	97,601	0	51,370	0	0	16,207	0	0	0	0	126,494	$291,672
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	201,230	$201,230
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	32,207	7,904	0	571,030	$611,141
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$54,293	$195,343	$756,468	$0	$78,826	$0	$672,230	$16,207	$0	$63,690	$7,904	$0	$898,753	$2,743,714
TOTAL NONRECURRING PROJECT NEEDS			$249,636	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,494,078	

CURRENT REPLACEMENT VALUE	$17,610,000
FACILITY CONDITION NEEDS INDEX	0.16
FACILITY CONDITION INDEX	0.04

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
43,595	$2,743,714	$62.94

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$63,055	$0	$63,055
EXTERIOR	$186,581	$657,343	$843,924
INTERIOR	$0	$724,288	$724,288
PLUMBING	$0	$8,406	$8,406
HVAC	$0	$291,672	$291,672
FIRE/LIFE SAFETY	$0	$201,230	$201,230
ELECTRICAL	$0	$611,141	$611,141
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$249,636**	**$2,494,078**	**$2,743,714**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
5200AC01	OVERHEAD CANE BARRIER PROTECTION	C2010	2	Plant Adaption	8,571
5200AC03	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	45,722
5200ES01	EXTERIOR MASONRY WALL RENEWAL	B2010	3	Corrective Action	186,581
5200AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	8,762
				TOTAL	**$249,636**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5200	WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	SINGLE PANE			B2020	Deferred Renewal	650,461
5200	BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	3197	B009	D2020	Deferred Renewal	8,406
5200	AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	ASU-1	3407	M0-1	D3040	Deferred Renewal	97,601
5200	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	BASEMENT			C3020	2019	27,456
5200	BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE	2009 RENO			D3060	2019	34,031
5200	BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE	2009 RENO			D3060	2019	17,339
5200	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			B2030	2021	946
5200	DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DOORS			B2030	2021	1,187
5200	DR36	DOOR PANIC HARDWARE, EXTERIOR	OPERATING DOORS			B2030	2021	4,748
5200	EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD				C3010	2021	39,387
5200	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2021	312,760
5200	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2021	313,202
5200	FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	ASU-1 RF	3408	M0-1	D3040	2022	16,207
5200	IF26	INTERIOR STAIR TREAD AND LANDING FINISH				C3020	2024	31,483
5200	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	DWDH		M0-1	D5010	2024	363
5200	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-1		M0-1	D5010	2024	727
5200	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	CWP-1	3308	M0-1	D5010	2024	3,633

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5200	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	3313	M0-1	D5010	2024	3,633
5200	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CT1	3158	ROOF	D5010	2024	3,999
5200	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-1	3296	B006	D5010	2024	3,999
5200	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-1	3307	M0-1	D5010	2024	3,999
5200	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-2	3306	M0-1	D5010	2024	3,999
5200	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 RF	3405	M0-1	D5010	2024	3,999
5200	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			MAIN ENTRY	D5020	2024	3,858
5200	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-1 SF	3298	M0-1	D5010	2025	7,904
5200	HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	EARLY 80S			D3040	2027	126,494
5200	FA01	FIRE ALARM SYSTEM - DEVICES		14407478		D4030	2027	187,373
5200	FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS		14407478	B003	D4030	2027	13,857
5200	LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				D5020	2027	571,030
							TOTAL	**$2,494,078**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
4	5200ES01	EXTERIOR MASONRY WALL RENEWAL	3	$186,581
		TOTAL FOR CORRECTIVE ACTION		**$186,581**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	5200AC03	INTERIOR STAIR UPGRADES	2	$45,722
2	5200AC01	OVERHEAD CANE BARRIER PROTECTION	2	$8,571
3	5200AC02	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$8,762
		TOTAL FOR PLANT ADAPTION		**$63,055**
		GRAND TOTAL:		**$249,636**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	5200AC03	2	Plant Adaption	INTERIOR STAIR UPGRADES	$45,722
2	5200AC01	2	Plant Adaption	OVERHEAD CANE BARRIER PROTECTION	$8,571
3	5200AC02	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$8,762
				TOTAL FOR ACCESSIBILITY	**$63,055**
4	5200ES01	3	Corrective Action	EXTERIOR MASONRY WALL RENEWAL	$186,581
				TOTAL FOR EXTERIOR	**$186,581**
				GRAND TOTAL:	**$249,636**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	5200AC03	**Category Code:** AC3B	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/20/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,3,4,B
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	8	$729	$5,836	$663	$5,305	$11,141
Switchback handrail/guardrail system per floor	FLR	8	$1,653	$13,221	$1,061	$8,488	$21,709
Base Material/Labor Costs				**$19,056**		**$13,794**	
Indexed Material/Labor Costs				**$18,942**		**$13,904**	**$32,846**
Construction Mark Up at 20.0%							**$6,569**
Original Construction Cost							**$39,415**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$39,415**
Professional Fees at 16.0%							**$6,306**
TOTAL PROJECT COST							**$45,722**

All costs shown as Present Value

OVERHEAD CANE BARRIER PROTECTION

Project Number:	5200AC01	**Category Code:** AC3B	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/20/2018	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	307.4	Not Applicable	Item Only: Floor(s) 2
ADAAG	308		

Description

There is no cane barrier protection for the low overhead under the interior lobby stair case. Appropriate cane barriers should be installed in each area that has an overhead obstacle less than 80 inches.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding guardrail system, painted	LF	20	$116	$2,321	$191	$3,820	$6,141
Base Material/Labor Costs				**$2,321**		**$3,820**	
Indexed Material/Labor Costs				**$2,307**		**$3,850**	**$6,157**
Construction Mark Up at 20.0%							**$1,231**
Original Construction Cost							**$7,389**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,389**
Professional Fees at 16.0%							**$1,182**
TOTAL PROJECT COST							**$8,571**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	5200AC02	**Category Code:** AC3F	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	9/20/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the single-level drinking fountain on the first floor is a barrier to accessibility. This drinking fountains should be replaced with a dual-level unit that is properly recessed or protected by cane barriers.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	1	$1,549	$1,549	$476	$476	$2,025
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
Base Material/Labor Costs				**$2,481**		**$3,798**	
Indexed Material/Labor Costs				**$2,467**		**$3,828**	**$6,295**
Construction Mark Up at 20.0%							**$1,259**
Original Construction Cost							**$7,553**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$7,553**
Professional Fees at 16.0%							**$1,209**
TOTAL PROJECT COST							**$8,762**

All costs shown as Present Value

EXTERIOR MASONRY WALL RENEWAL

Project Number:	5200ES01
Priority Sequence:	4
Priority Class:	Noncritical
Project Class:	Corrective Action
Date Basis:	9/20/2018

Category Code: ES2B

System:	EXTERIOR
Component:	COLUMNS/BEAMS/WALLS
Element:	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The brick exterior wall finish is timeworn and damaged and in need of extensive repair on the northeastern elevation. Restore the exterior masonry finishes to include restoration or replacement of units, cleaning and repointing. Match any new masonry units and pointing to the existing systems as best as possible. Application of penetrating sealant is recommended.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Repair brick exterior wall, average bond	SF	4,000	$8.38	$33,520	$24.98	$99,920	$133,440
Base Material/Labor Costs				**$33,520**		**$99,920**	
Indexed Material/Labor Costs				**$33,319**		**$100,719**	**$134,038**
Construction Mark Up at 20.0%							**$26,808**
Original Construction Cost							**$160,846**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$160,846**
Professional Fees at 16.0%							**$25,735**
TOTAL PROJECT COST							**$186,581**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	SINGLE PANE			3,170	SF	$650,461	1880	40	97	DR
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	DUAL PANE			2,590	SF	$531,450	2009	40		2049
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			1	LEAF	$2,007	2009	40		2049
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			1	LEAF	$2,007	2009	40		2049
DR11	DOOR AND FRAME, EXTERIOR, SWINGING, FRENCH-STYLE, HARDWOOD	OPERATING DRS			4	LEAF	$18,026	2009	50		2059
DR11	DOOR AND FRAME, EXTERIOR, SWINGING, FRENCH-STYLE, HARDWOOD	NONOPERATING			6	LEAF	$27,039	2009	50		2059
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			4	EA	$27,081	2009	20		2029
DR28	DOOR OPERATOR, POWER-ASSIST	OPERATING DOORS			2	EA	$13,541	2009	20		2029
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS			1	EA	$946	2009	12		2021
DR36	DOOR PANIC HARDWARE, EXTERIOR	OPERATING DOORS			4	EA	$4,748	2009	12		2021
DR36	DOOR PANIC HARDWARE, EXTERIOR	METAL DOORS			1	EA	$1,187	2009	12		2021
RR03	ROOF - 1-PLY, UNBALLASTED	TPO			9,100	SF	$140,003	2010	20		2030
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				400	SF	$114,469	2010	35		2045
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	OFFICE DRS			39	LEAF	$86,246	2009	60		2069
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			12	LEAF	$44,022	2009	60		2069
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			69	LEAF	$253,129	2009	60		2069

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	OFFICE DRS			39	EA	$29,363	2009	35		2044
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	INTERIOR DRS			69	EA	$51,950	2009	35		2044
DR26	DOOR PANIC HARDWARE, INTERIOR	INTERIOR DRS			12	EA	$14,244	2009	30		2039
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				130	LF	$72,915	2009	30		2039
EF01	EXTERIOR WALL FINISH - APPLIED, STANDARD				7,000	SF	$39,387	2009	12		2021
IW01	WALL FINISH - APPLIED, STANDARD				112,060	SF	$312,760	2009	12		2021
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				3,470	SF	$140,541	2009	60		2069
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				26,290	SF	$313,202	2009	12		2021
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	BKRMS, COPY			1,570	SF	$10,805	2009	20		2029
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	RRS, C1-1			3,140	SF	$110,737	2009	40		2049
IF12	FLOORING - LAMINATE PLANK, STANDARD	INT STAIRS			390	SF	$3,242	2009	25		2034
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	BASEMENT			7,850	SF	$27,456	2009	10		2019
IF26	INTERIOR STAIR TREAD AND LANDING FINISH				8	FLR	$31,483	2009	15		2024
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OFFICES			13,730	SF	$152,817	2009	45		2054
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD	CMN AREA, BASEMENT			25,500	SF	$71,171	2009	24		2033
VT01	ELEVATOR MODERNIZATION - TRACTION - LOW RISE 2-8 FLOORS	ELEV 1	4379	ELEV PTHS	1	EA	$442,434	2004	25		2029

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				11	EA	$9,467	2009	25		2034
FX04	PLUMBING FIXTURE - SINK, KITCHEN				5	EA	$3,863	2009	20		2029
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				2	EA	$3,329	2009	50		2059
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				2	EA	$2,275	2009	35		2044
FX10	PLUMBING FIXTURE - URINAL				4	EA	$4,315	2009	35		2044
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				15	EA	$25,425	2009	35		2044
BF02	BACKFLOW PREVENTER (1-2 INCHES)	DW BFP	3291	B006	1	EA	$1,788	2009	20		2029
BF04	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	3197	B009	1	EA	$8,406	1982	20	15	DR
PS14	SUPPLY PIPING SYSTEM - OFFICE	2009 RENO			39,195	SF	$162,158	2009	50		2059
PS14	SUPPLY PIPING SYSTEM - OFFICE	EARLY 80S			4,400	SF	$18,204	1982	50		2032
WH10	WATER HEATER - RESIDENTIAL, GAS (>55 GAL)	DWH1	3293	B006	60	GAL	$2,269	2009	20		2029
PD14	DRAIN PIPING SYSTEM - OFFICE	2009 RENO			39,195	SF	$242,548	2009	60		2069
PD14	DRAIN PIPING SYSTEM - OFFICE	EARLY 80S			4,400	SF	$27,228	1982	60		2042
BL26	BOILER - GAS (800-1500 MBH)	BL1	3287	B006	850	MBH	$46,926	2009	28		2037
CH01	CHILLER - WATER-COOLED CENTRIFUGAL OR SCREW (<=150 TONS)	CH1	9364	M0-1	30	TON	$72,315	2009	30		2039
CT01	COOLING TOWER (<=100 TONS)	CT1	3157	ROOF	65	TON	$40,529	2003	29		2032

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-4	3162	ROOF	6	TON	$13,739	2009	25		2034
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CU-3	3161	ROOF	3	TON	$6,869	2009	25		2034
HU08	EVAPORATOR UNIT, NO HEAT (2-3 TON)	FC-4	3200	B014	3	TON	$5,611	2009	30		2039
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	FC-3		B014	6	TON	$8,979	2009	30		2039
HU19	DUCTLESS DX SPLIT SYSTEM (>2 TON)	CU-2	9367, 3159	ROOF	3	TON	$3,566	2009	25		2034
HU19	DUCTLESS DX SPLIT SYSTEM (>2 TON)	CU-1	9363, 6710	ROOF, 318	3	TON	$3,566	2014	25		2039
AH08	AIR HANDLING UNIT - INDOOR (12-17 HP)	ASU-1	3407	M0-1	15	HP	$97,601	1982	35		DR
AH31	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (2000-6000 CFM)	DWDH	3404	M0-1	2,250	CFM	$10,108	2009	25		2034
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-1	3156	ROOF	1	EA	$6,899	2009	25		2034
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EF-2	3406	M0-1	5	HP	$6,604	2009	35		2044
FN34	FAN - UTILITY SET, 1/4" SP (4-12 HP)	ASU-1 RF	3408	M0-1	8	HP	$16,207	1982	40		2022
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	2009 RENO			39,195	SF	$1,126,803	2009	45		2054
HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	EARLY 80S			4,400	SF	$126,494	1982	45		2027
HX06	HEAT EXCHANGER - PLATE FRAME (<=200 GPM)	HEX1	3314	M0-1	48	GPM	$6,849	2009	30		2039
HX06	HEAT EXCHANGER - PLATE FRAME (<=200 GPM)	HEX2	3297	M0-1	48	GPM	$6,849	2009	30		2039
PH01	PUMP - ELECTRIC (<=10 HP)	HWP-1	3292	B006	8	HP	$12,187	2009	30		2039

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-1	3310	M0-1	8	HP	$12,187	2009	30		2039
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP-2	3311	M0-1	8	HP	$12,187	2009	30		2039
PH01	PUMP - ELECTRIC (<=10 HP)	CWP-1	3312	M0-1	5	HP	$8,463	2006	30		2036
BA14	HVAC CONTROLS - TERMINAL ASSEMBLIES - OFFICE	2009 RENO			43,595	SF	$120,716	2009	20		2029
BA37	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE	2009 RENO			43,595	SF	$34,031	2009	10		2019
BA60	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE	2009 RENO			43,595	SF	$17,339	2009	10		2019
FS01	FIRE SPRINKLER SYSTEM - WET				43,595	SF	$589,781	2009	80		2089
FA01	FIRE ALARM SYSTEM - DEVICES		14407478		43,595	SF	$187,373	2009	18		2027
FA03	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS		14407478	B003	1	EA	$13,857	2009	18		2027
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC1	3309	M0-1	4	EA	$304,869	1982	25	25	2032
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	2009 RENO			39,195	SF	$868,159	2009	50		2059
SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	EARLY 80S			4,400	SF	$97,459	1982	50		2032
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	SDP		B003	2,500	AMP	$210,514	1982	40	6	2028
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	CWP-1	3308	M0-1	5	HP	$3,633	2009	15		2024
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	3313	M0-1	5	HP	$3,633	2009	15		2024
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	DWDH		M0-1	1	HP	$363	2009	15		2024

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-1		M0-1	1	HP	$727	2009	15		2024
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CT1	3158	ROOF	8	HP	$3,999	2004	15	5	2024
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-1	3296	B006	8	HP	$3,999	2009	15		2024
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-1	3307	M0-1	8	HP	$3,999	2009	15		2024
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-2	3306	M0-1	8	HP	$3,999	2009	15		2024
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 RF	3405	M0-1	8	HP	$3,999	2009	15		2024
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-1 SF	3298	M0-1	20	HP	$7,904	2009	16		2025
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			MAIN ENTRY	5	EA	$3,858	2009	20	-5	2024
LI14	LIGHTING SYSTEM, INTERIOR - OFFICE				43,595	SF	$571,030	2009	20	-2	2027
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				37,000	SF	$84,972	2009	20		2029
UP03	UNINTERRUPTIBLE POWER SUPPLY (5-40 KVA)	UPS1	3195	B010	10	KVA	$19,917	2009	20		2029
						Grand Total:	**$9,063,808**				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B2020	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD	SINGLE PANE	3,170	SF	$650,461	DR
D2020	BACKFLOW PREVENTER (3-4 INCHES)	FIRE BFP	1	EA	$8,406	DR
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	ASU-1	15	HP	$97,601	DR
				TOTAL DEFERRED RENEWAL COST	$756,468	

No Projected Component Replacement Cost for Asset No. 5200 for 2018

2019						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL	BASEMENT	7,850	SF	$28,280	2019
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - OFFICE	2009 RENO	43,595	SF	$17,859	2019
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - OFFICE	2009 RENO	43,595	SF	$35,052	2019
	2019	PROJECTED COMPONENT REPLACEMENT COST			$81,191	

No Projected Component Replacement Cost for Asset No. 5200 for 2020

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		26,290	SF	$342,244	2021
C3010	WALL FINISH - APPLIED, STANDARD		112,060	SF	$341,761	2021
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	METAL DRS	1	EA	$1,034	2021
B2030	DOOR PANIC HARDWARE, EXTERIOR	OPERATING DOORS	4	EA	$5,188	2021
B2030	DOOR PANIC HARDWARE, EXTERIOR	METAL DOORS	1	EA	$1,297	2021
C3010	EXTERIOR WALL FINISH - APPLIED, STANDARD	0	7,000	SF	$43,039	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$734,564**	

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3040	FAN - UTILITY SET, 1/4" SP (4-12 HP)	ASU-1 RF	8	HP	$18,241	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$18,241**	

No Projected Component Replacement Cost for Asset No. 5200 for 2023

2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	INTERIOR STAIR TREAD AND LANDING FINISH		8	FLR	$37,592	2024

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)		5	EA	$4,607	2024
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CT1	8	HP	$4,775	2024
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	HWP-1	8	HP	$4,775	2024
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-1	8	HP	$4,775	2024
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-2	8	HP	$4,775	2024
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	CWP-1	5	HP	$4,338	2024
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	ASU-1 RF	8	HP	$4,775	2024
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-2	5	HP	$4,338	2024
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	DWDH	1	HP	$434	2024
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	EF-1	1	HP	$868	2024
	2024	**PROJECTED COMPONENT REPLACEMENT COST**			**$76,049**	

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	ASU-1 SF	20	HP	$9,721	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$9,721**	

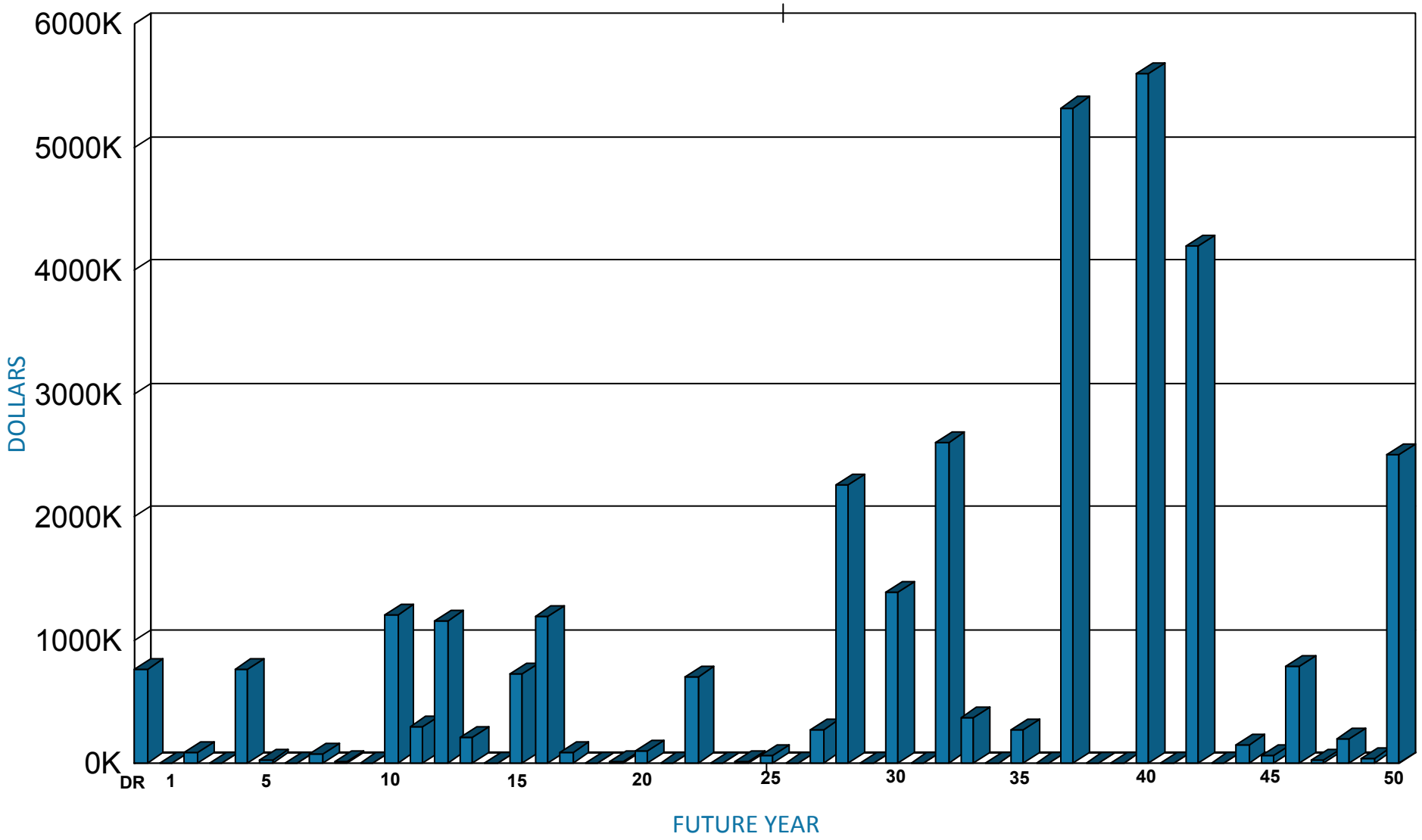
No Projected Component Replacement Cost for Asset No. 5200 for 2026

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING SYSTEM, INTERIOR - OFFICE		43,595	SF	$745,064	2027
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 200 POINTS		1	EA	$18,080	2027
D4030	FIRE ALARM SYSTEM - DEVICES		43,595	SF	$244,479	2027
D3040	HVAC DISTRIBUTION NETWORKS - OFFICE	EARLY 80S	4,400	SF	$165,046	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$1,172,669	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



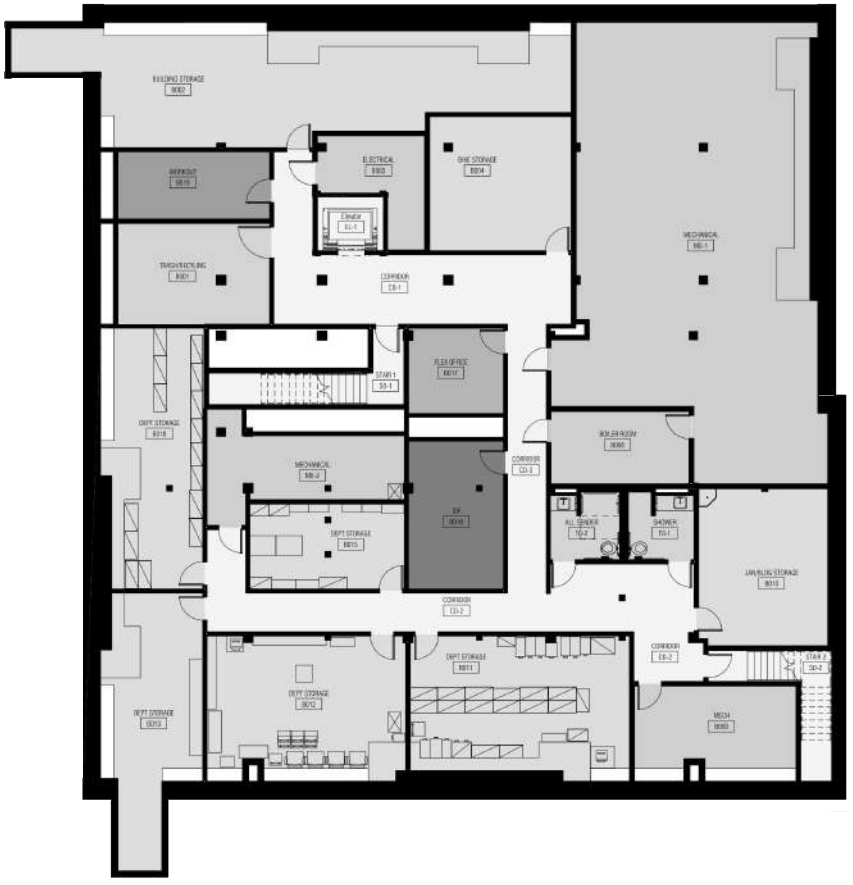
Average Annual Renewal Cost per SF $6.25

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE



AC03

PCC
DOWNTOWN
CENTER

BLDG NO. 5200

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

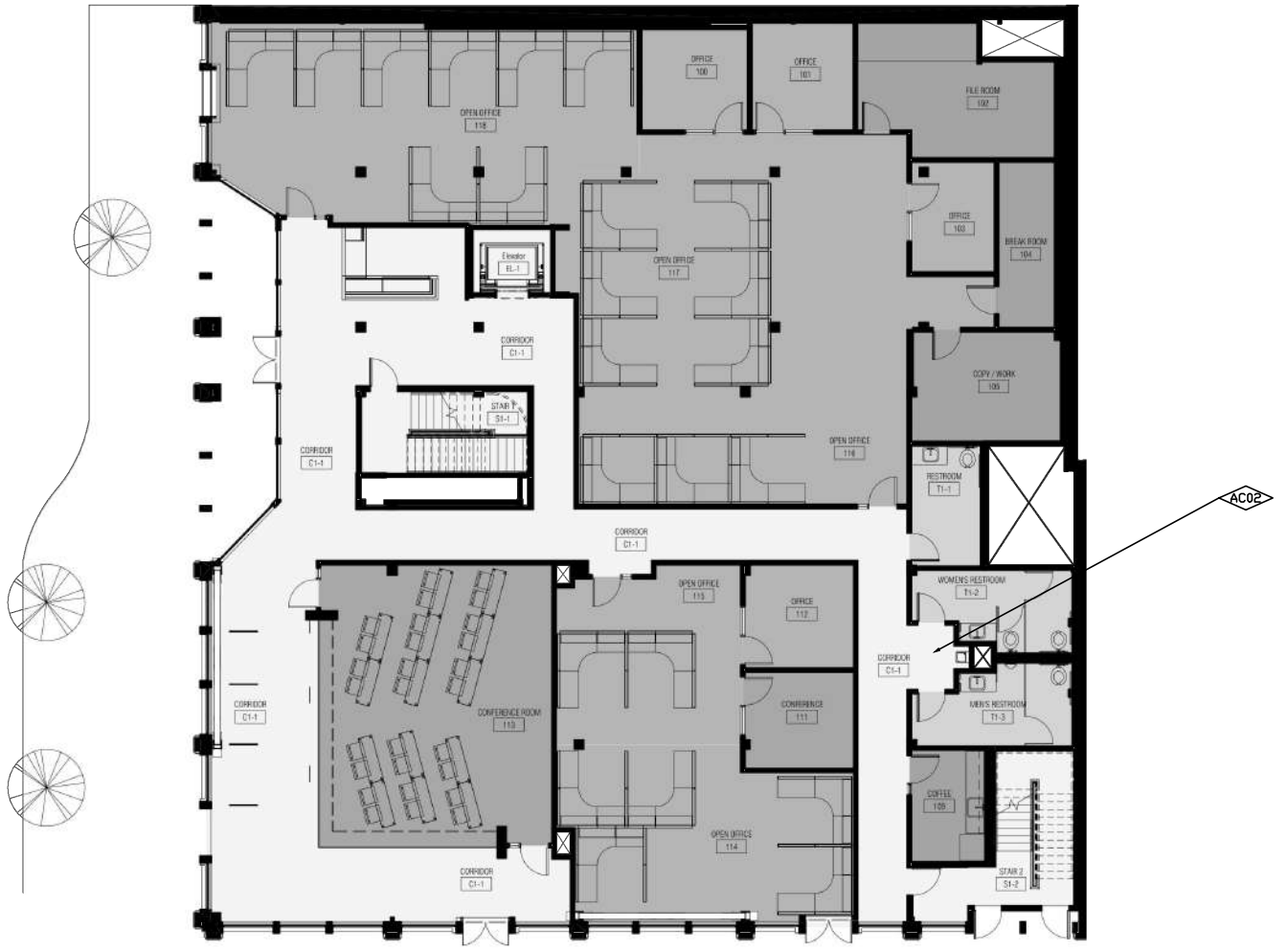
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

BASEMENT
FLOOR
PLAN

Sheet No.
1 of 5

PORTLAND COMMUNITY COLLEGE



ES01

AC03

PCC
DOWNTOWN
CENTER

BLDG NO. 5200

ES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

FIRST
FLOOR
PLAN

Sheet No.
2 of 5

PORTLAND COMMUNITY COLLEGE

PCC
DOWNTOWN
CENTER

BLDG NO. 5200

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

SECOND
FLOOR
PLAN

Sheet No.
3 of 5

PORTLAND COMMUNITY COLLEGE

AC03

PCC
DOWNTOWN
CENTER

BLDG NO. 5200

SES CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

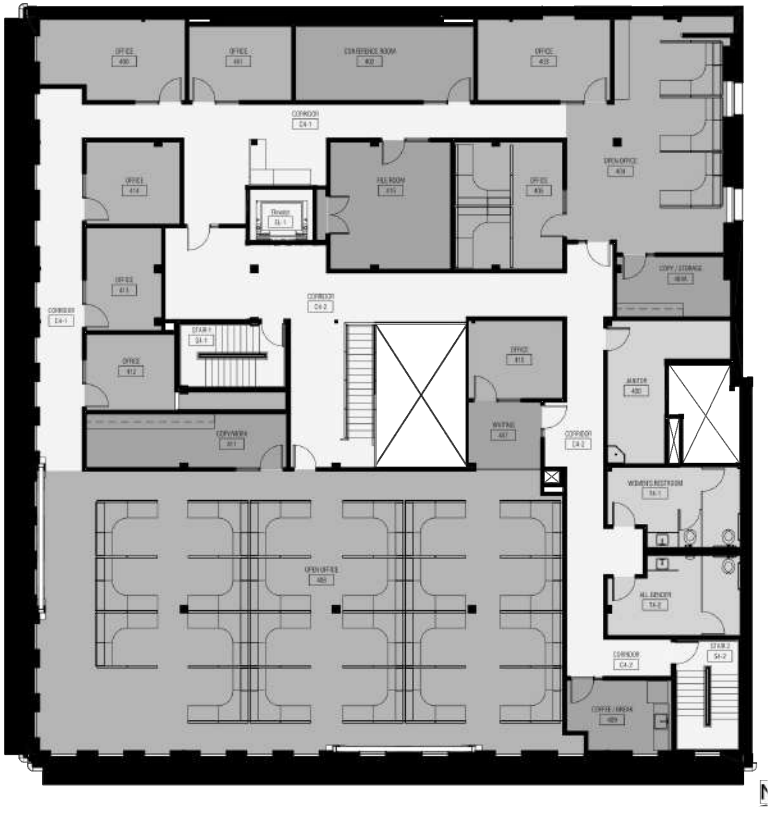
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
4 of 5

PORTLAND COMMUNITY COLLEGE



AC03

PCC
DOWNTOWN
CENTER

BLDG NO. 5200

CORPORATION

FACILITY
CONDITION
ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 10/31/2018
Drawn by: A.W.
Project No. 18-064

FOURTH
FLOOR
PLAN

Sheet No.
5 of 5

SECTION 6

PHOTOGRAPHS

5200001a 8/30/2018

TPO roof

Roof

5200001e 8/30/2018

Upgraded elevator cab

Elevator #1

5200002a 8/30/2018

Aluminum and glass skylight

Roof

5200002e 8/30/2018

Pendent CFL lighting in common corridors

Throughout

5200003a 8/30/2018

Rubber treads and noncompliant railing

Stair towers

5200003e 8/30/2018

T8 lay-in acrylic light fixtures

Fourth floor, office spaces

5200004a 8/30/2018
Carpeted floor, painted walls, and lay-in acoustical tile ceiling
Room 403

5200004e 8/30/2018
Typical electric thermostat for local climate control
Throughout

5200005a 8/30/2018
Carpeted floor and painted surfaces
Corridor C4-1

5200005e 8/30/2018
Original elevator traction machine modernized in 2004 with ropes and AC motor
Elevator penthouse

5200006a 8/30/2018
Ceramic tile finishes and plumbing fixtures
Restroom T4-2

5200006e 8/30/2018
DX split system air-cooled condensers
Roof

5200007a 8/30/2018

Counter-mounted lavatory

Restroom T4-2

5200007e 8/30/2018

Counter-flow 65-ton cooling tower

Roof

5200008a 8/30/2018

Vinyl sheet flooring, casework, painted walls, and lay-in acoustical tile

Room 411

5200008e 8/30/2018

Centrifugal exhaust fan

Roof

5200009a 8/30/2018

Original single-pane glazing with wood casing

Corridor C4-1

5200009e 8/30/2018

Updated secondary electrical panelboards

Third floor, corridor closet

5200010a 8/30/2018

Interior stairs with laminate flooring

Corridor C4-2

5200010e 8/30/2018

Typical ductless evaporator unit

Third floor, room 318

5200011a 8/30/2018

Carpeted floor and painted surfaces

Room 317

5200011e 8/30/2018

Typical glass bulb fire suppression sprinkler head

Throughout

5200012a 8/30/2018

Ceramic tile and carpet transition

Corridor C1-1

5200012e 8/30/2018

Typical VAV unit with electric heat

Throughout

5200013a 8/30/2018
Carpeted floor and painted surfaces
Room 113

5200013e 8/30/2018
Main switchboard installed in the early 1980s
Basement, B003

5200014a 8/30/2018
Accessible shower
Restroom T0-2

5200014e 8/30/2018
Fire alarm control panel
Basement, B003

5200015a 8/30/2018
Typical concrete floor and painted surfaces
Basement

5200015e 8/30/2018
Secondary electrical panelboards from the early 1980s
Basement, B003

5200016a 8/30/2018
Wood and glass door
South elevation

5200016e 8/30/2018
One of two fan coil units
Basement, B014

5200017a 8/30/2018
Primary elevation
Southwest corner

5200017e 8/30/2018
Direct digital control system for HVAC.
Basement, B014

5200018a 8/30/2018
Deteriorated brick surfaces
Northeast corner

5200018e 8/30/2018
Fire suppression system backflow preventer valve and various vintage drain piping
Basement, B009

5200019e 8/30/2018
10 kVA 120/208 volt UPS for building emergency power
Basement, B010

5200020e 8/30/2018
Gas-fired heating hot water boiler
Basement, B006

5200021e 8/30/2018
Typical VFDs for mechanical equipment
Basement, B006

5200022e 8/30/2018
30-ton modular scroll-type chiller
Basement, M0-1

5200023e 8/30/2018
Chilled water and condenser pumps
Basement, M0-1

5200024e 8/30/2018
Enthalpy wheel for moisture and temperature control in basement spaces
Basement, M0-1

5200025e 8/30/2018
Two plate-frame heat exchangers
Basement, M0-1

5200026e 8/30/2018
Basement inline centrifugal exhaust fan
Basement, M0-1

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	5200
Asset Name	PCC Downtown Center
Year Built or Last Energy Renovation	2009

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

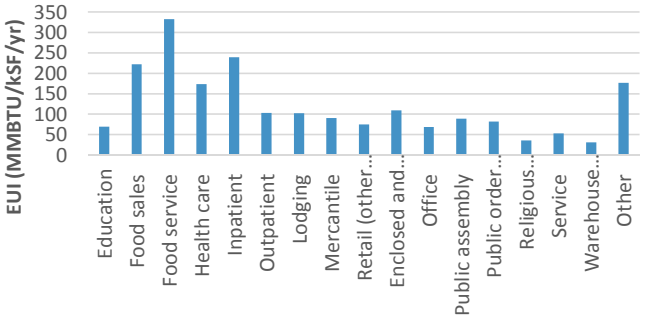
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Office
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**68.5**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48
Energy Efficient (consumes 10% to 30% less energy)	48 <= EUI <= 61.7
Similar (consumes within 10% less or 10% more energy)	61.7 < EUI < 75.4
Energy Inefficient (consumes 10% to 30% more energy)	75.4 <= EUI <= 89.1
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.1

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

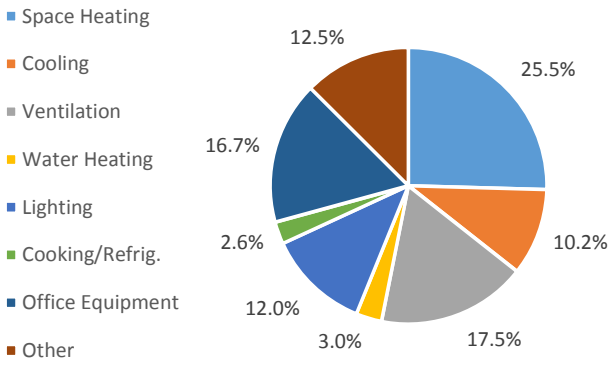


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: OFFICE	
Space Heating	25.5%
Cooling	10.2%
Ventilation	17.5%
Water Heating	3.0%
Lighting	12.0%
Cooking/Refrig.	2.6%
Office Equipment	16.7%
Other	12.5%
Total	100.0%

Figure 2. Energy End Use Profile: Office



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Building Envelope - Insulation	INSTALL ADDITIONAL INSULATION. Insulation increases the R-value of the envelope and reduces the heat gain/loss through the envelope.	LC/NC; CAP
Building Envelope - Window/Door Heat Gain/Loss	INCREASE THE R-VALUE OF THE WINDOWS/DOORS. ENERGY STAR qualified fenestration products such as windows and doors can minimize HVAC energy consumption by reducing solar heat gain/loss.	CAP
Building Envelope - Window/Door Air Infiltration	WEATHERSTRIP/CAULK WINDOWS/DOORS. When there is air leakage, weatherstrip around movable components and caulk around rigid components to reduce infiltration and save on heating/cooling costs.	O&M; LC/NC
HVAC - Cooling Tower Meter	INSTALL A COOLING TOWER METER. A water meter on the cooling tower can be used to determine how much water is evaporated, lost to overflow, or lost to drift. This information can be sent to the water provider to reduce the cost of sewer treatment.	LC/NC
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Center

Facility Condition Assessment

Newberg Center
Asset 5400

Inspected August 24, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

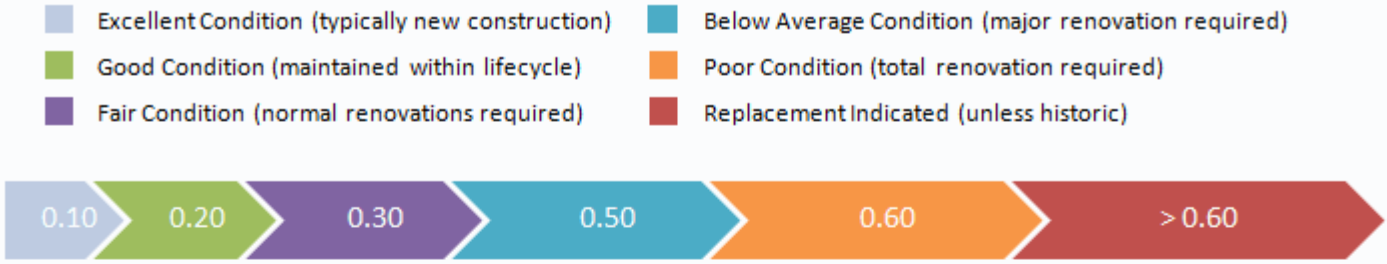
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

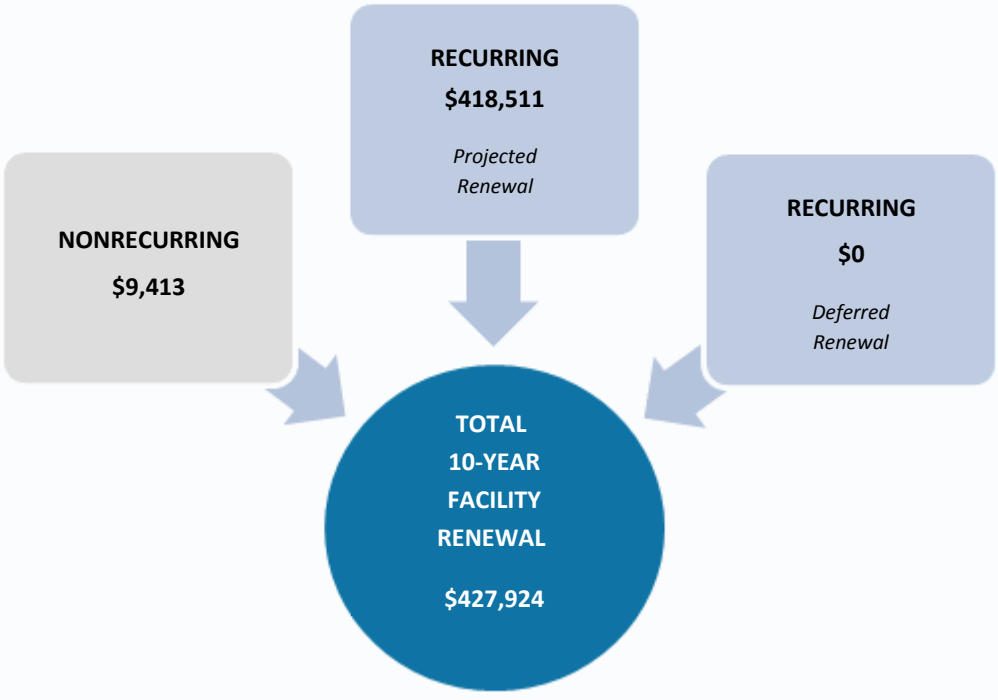
ASSET CODE	5400		
ASSET NAME	NEWBERG CENTER	**CURRENT REPLACEMENT VALUE**	$5,942,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.07
YEAR BUILT	2011	**FACILITY CONDITION INDEX**	0.00
GSF	12,800	**10-YEAR $/SF**	33.43
INSPECTION DATE	08/24/2018		

FCNI Scale

The FCNI for this asset is **0.07**



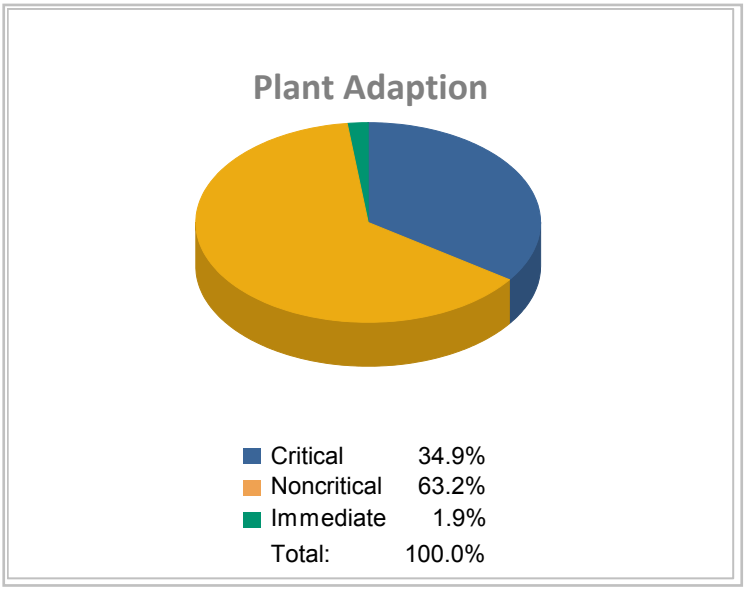
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

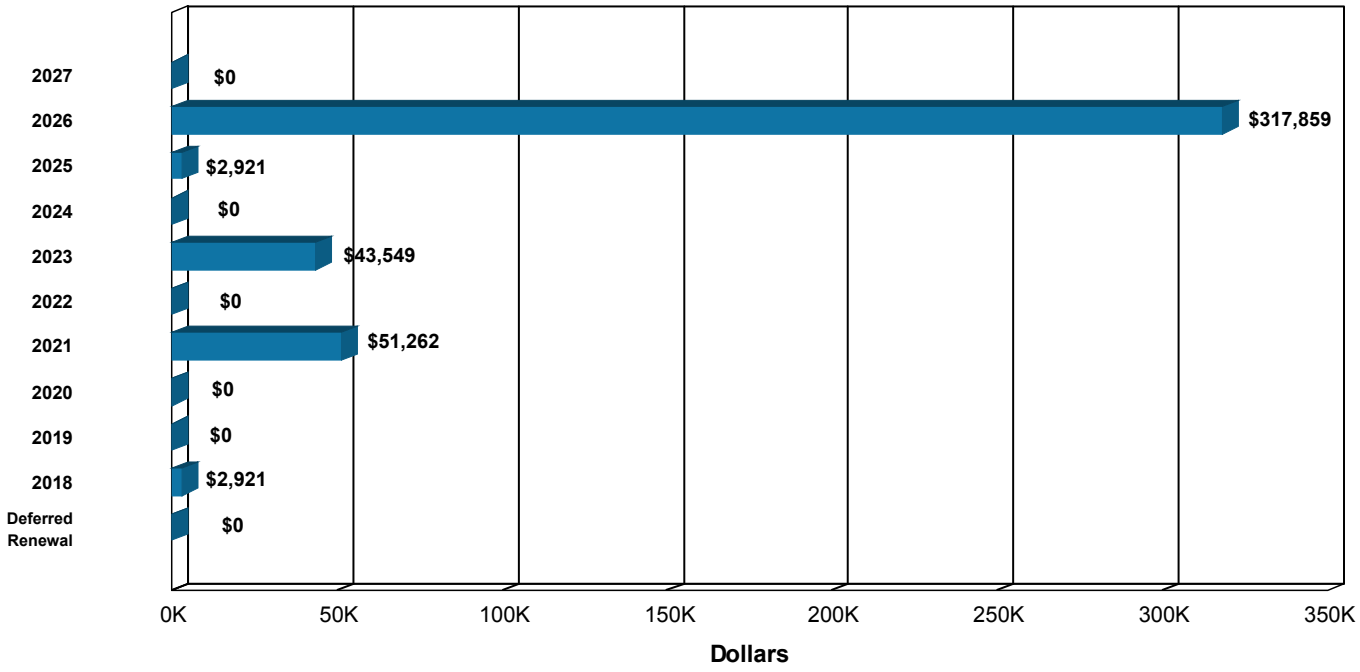
PLANT ADAPTION	
1 - Immediate	**$182**
2 - Critical	**$3,281**
3 - Noncritical	**$5,950**



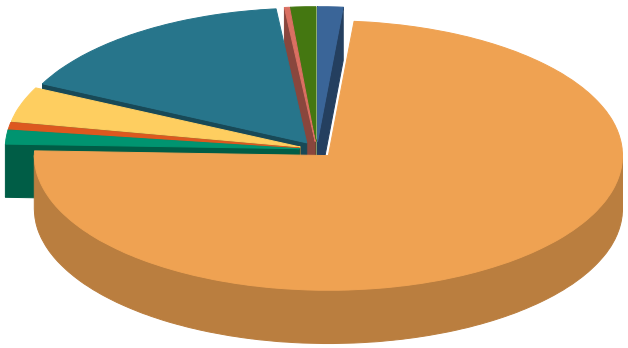
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$5,950	1%
Electrical	$317,859	74%
Exterior	$6,400	1%
Fire/Life Safety	$3,463	1%
Health	$0	0%
HVAC	$18,479	4%
Interiors	$68,942	16%
Plumbing	$990	0%
Site	$5,841	1%
Vert. Trans.	$0	0%
TOTAL	**$427,924**	

ASSET SUMMARY

Newberg Center is a standalone building in the Portland Community College system of campuses. Built in 2011, this single-story building houses classrooms for general educational courses and community continuing educations programs. The building is a LEED Platinum facility and was the first net-zero educational building in Oregon. A small penthouse provides space for most of the mechanical equipment. The building has both flat roofs and a sloped standing seam metal roof supporting a solar photovoltaic array which is a component of the net-zero operations.

Information for this report was gathered during a site visit conducted on August 20, 2018.

Site

The building is located on the corner of Brutscher Street and Werth Boulevard in the community of Newberg, Oregon. The site is level and extensively landscaped. Parking is provided in an asphalt-paved lot just south of the building and service access is provided by an asphalt-paved drive and service court on the north side of the building. The asphalt should be sealcoated within the next few years to prolong the life of the material.

Exterior Structure

The building has two roofing systems, both of which are in good condition. The flat roofs are covered with an asphaltic membrane and the sloped portion of the roof is finished with standing-seam metal. A portion of the overhang uses the solar collectors as a roof covering. The exterior walls are a combination of brick and metal panels, all in good condition. Windows and glazing systems are a combination of curtain wall and storefront systems which should last another ten or more years. Only the door hardware will require replacement in the next ten years.

Interior Finishes/Systems

The sealed, polished concrete floors are in good condition but should be resealed within the next ten years. Wall finishes include paint, ceramic tile, and wood paneling. The ceramic tile and wood finishes are in good condition but it is recommended that the painted walls be repainted within the next ten years. Ceilings are suspended acoustical tile and suspended wood, as well as painted hard surfaces. All of these are in good condition. The doors and casework are also in good condition and no work is recommended on any of these installations.

Accessibility

This facility was built subject to recent accessibility legislation and provides required accessible features including grade-level entrances, a dual-level drinking fountain, accessible restrooms, and compliant door hardware and signage. The one barrier to accessibility noted on the day of inspection is the lack of side protection on the otherwise compliant drinking fountains. Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion, such as the drinking fountains, exceeding these limits should be provided with cane guards or flanked by walls.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility including utility room 104. Although only this instance was noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

The egress pathway in the office suite area is not clearly designated by exit signs. It is recommended that new LED-type battery backup exit signs be installed in this area. Emergency lighting is believed to be contained in select overhead fixtures tied to the emergency power network. This appears to be an adequate application for the facility.

The facility has a Silent Knight modern fire alarm system with the main addressable fire alarm panel in room 104. The system incorporates smoke detectors and pull stations for activation and audible/visual strobes for notification. The system appears to provide adequate coverage, is well maintained, and should outlast the scope of this report. Two Wheellock mass notification panels were also observed and are inventoried for information purposes.

The facility is provided fire suppression by an automatic sprinkler system. Additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The fire suppression system appears to provide adequate coverage and is in good condition. There are no recommendations at this time.

HVAC

Several indoor air handling units (AHUs) equipped with enthalpy wheels for energy conservation provide tempered air. Distribution equipment is constructed of metal ductwork and the controls are a digital

application. A water source heat pump was also observed in room 103. This facility also has an air-cooled chiller equipped with two sections for cooling. A gas-fired boiler provides heating water. Pumps circulate the heating hot water and the chilled water. An expansion tank supports the heating system. The HVAC equipment is in excellent condition and well maintained. The system has remaining service life beyond the scope of this report other than the need for a partial control upgrade in the next five years.

Additional cooling is provided by split and ductless split systems in select rooms. Additionally, there is an air curtain at the main entryway. These unitary units are in good condition with no recommendations.

Facility exhaust is provided by inline centrifugal fans or directly from the AHUs. The exhaust equipment serves restrooms and general exhaust needs. Based on age, the fans have remaining life beyond the scope of this report.

Electrical

Power is supplied the facility at 120/208 volts via underground utilities. A 1,200 amp main switchboard receives the power for distribution. The main electrical equipment appears to be well maintained and has substantial remaining service life. The electrical distribution network consists of panelboards which distribute power at 120/208 volts. Circuits are then energized for mechanical, lighting, and general purpose loads. The distribution system appears to be well constructed and properly marked. The system should continue to serve the facility over the scope of this report.

This building has a solar array and several inverters to produce power on site. The equipment is in good condition and dates to 2011. Due to a short lifecycle, the solar panels may need to be considered for replacement on a low priority basis.

The interior lighting consists of lay-in and suspended fixtures equipped with parabolic, acrylic, or mesh screen lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by can-type fixtures with compact fluorescent bulbs. Occupancy sensors are present to conserve energy. The interior lighting scheme appears to be in excellent condition and, based on age, has remaining service life beyond the scope of this report.

Exterior lighting consists of eave- and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted fixtures on the site. The fixtures appear to be well maintained and are in good condition with no recommendations.

Emergency power is provided by a Cummins diesel-fired generator on the site. Two automatic transfer switches (ATS) deliver the emergency power to the facility. The generator and switches are well maintained and in good condition. The equipment has remaining service life beyond the scope of this report.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequencies and voltage to conserve energy. The VFDs have service to the AHUs and pumps. They are in

excellent condition but have a short lifecycle and replacement should be scheduled over the next ten years.

Plumbing

The domestic water system is supplied through a copper piping network. Backflow preventers prevent cross contamination of the water system. Drain piping is believed to be constructed of cast-iron with no hub connections. The piping systems, where they could be viewed, are in adequate condition and have substantial remaining service life. Additionally, the backflow preventer should continue to serve the facility beyond the next ten years.

Domestic hot water is produced by two electric commercial-grade water heaters manufactured by Bradford White or General Electric and installed in 2011. A small pump and expansion tank support the water heaters. The domestic water heating equipment is in excellent condition with no recommendations. Additionally, there is an instantaneous water heater for a select sink that appears to be in good condition. Due to a short lifecycle, replacement may need to be considered within the scope of this report.

The plumbing fixtures consists of drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of these fixtures are within their normal lifecycle and should last another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 24, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$FCNI = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$FCI = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	5,950	0	0	0	0	0	0	0	0	0	0	0	$5,950
EXTERIOR	0	0	0	0	0	0	0	0	0	6,400	0	0	0	0	$6,400
INTERIOR	0	0	0	0	0	0	0	31,793	0	37,148	0	0	0	0	$68,942
PLUMBING	0	0	0	0	0	0	0	990	0	0	0	0	0	0	$990
HVAC	0	0	0	0	0	0	0	18,479	0	0	0	0	0	0	$18,479
FIRE/LIFE SAFETY	182	3,281	0	0	0	0	0	0	0	0	0	0	0	0	$3,463
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	317,859	0	$317,859
SITE	0	0	0	0	2,921	0	0	0	0	0	0	2,921	0	0	$5,841
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$182	$3,281	$5,950	$0	$2,921	$0	$0	$51,262	$0	$43,549	$0	$2,921	$317,859	$0	$427,924
TOTAL NONRECURRING PROJECT NEEDS			$9,413	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$418,511	

CURRENT REPLACEMENT VALUE	$5,942,000
FACILITY CONDITION NEEDS INDEX	0.07
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
12,800	$427,924	$33.43

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$5,950	$0	$5,950
EXTERIOR	$0	$6,400	$6,400
INTERIOR	$0	$68,942	$68,942
PLUMBING	$0	$990	$990
HVAC	$0	$18,479	$18,479
FIRE/LIFE SAFETY	$3,463	$0	$3,463
ELECTRICAL	$0	$317,859	$317,859
SITE	$0	$5,841	$5,841
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$9,413**	**$418,511**	**$427,924**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
5400FS01	ELIMINATE FIRE RATING COMPROMISES	C1010	1	Plant Adaption	182
5400FS02	IMPROVE EGRESS PATHWAY DESIGNATION	D5090	2	Plant Adaption	3,281
5400AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	5,950
				TOTAL	**$9,413**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5400	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SVC CRT & DRV			G2020	2018	2,921
5400	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	2021	31,793
5400	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		102A	D2020	2021	990
5400	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2021	12,067
5400	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2021	6,412
5400	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2023	2,839
5400	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2023	3,561
5400	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2023	37,148
5400	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SVC CRT & DRV			G2020	2025	2,921
5400	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-6 SUP	0000003464	M2-01	D5010	2026	727
5400	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-7 SUP	0000003465	M2-01	D5010	2026	727
5400	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-1	0000003478	M2-01	D5010	2026	1,090
5400	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-2	0000003479	M2-01	D5010	2026	1,090
5400	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-5 SUP	0000003463	M2-01	D5010	2026	1,453
5400	PV01	PHOTOVOLTAIC SOLAR GRID (100 to 500 SF)	FRONIUS		ROOF	D5090	2026	312,773

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
						TOTAL	$418,511

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	5400FS01	ELIMINATE FIRE RATING COMPROMISES	1	$182
2	5400FS02	IMPROVE EGRESS PATHWAY DESIGNATION	2	$3,281
3	5400AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$5,950
		TOTAL FOR PLANT ADAPTION		**$9,413**
		GRAND TOTAL:		**$9,413**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
3	5400AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$5,950
				TOTAL FOR ACCESSIBILITY	**$5,950**
1	5400FS01	1	Plant Adaption	ELIMINATE FIRE RATING COMPROMISES	$182
2	5400FS02	2	Plant Adaption	IMPROVE EGRESS PATHWAY DESIGNATION	$3,281
				TOTAL FOR FIRE/LIFE SAFETY	**$3,463**
				GRAND TOTAL:	**$9,413**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ELIMINATE FIRE RATING COMPROMISES

Project Number:	5400FS01	**Category Code:** FS5C	
Priority Sequence:	1		
Priority Class:	Immediate	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	10/27/2018	**Element:**	SEPARATION RATING

Code Application:		Subclass/Savings:	Project Location:
IBC	711.3	Not Applicable	Undefined: Floor(s) 1

Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility including utility room 104. Although only this instance was noted, other fire separation compromises may exist elsewhere in this building. It is recommended that the entire building be surveyed for similar problem areas, especially in conditions and spaces that are similar to those that were observed. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	LOT	1	$30.00	$30	$100	$100	$130
Base Material/Labor Costs				**$30**		**$100**	
Indexed Material/Labor Costs				**$30**		**$101**	**$131**
Construction Mark Up at 20.0%							**$26**
Original Construction Cost							**$157**
Date of Original Estimate: 10/27/2018						**Inflation**	**$0**
Current Year Construction Cost							**$157**
Professional Fees at 16.0%							**$25**
TOTAL PROJECT COST							**$182**

All costs shown as Present Value

IMPROVE EGRESS PATHWAY DESIGNATION

Project Number:	5400FS02	**Category Code:** FS1A	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	LIGHTING
Date Basis:	10/27/2018	**Element:**	EGRESS LTG./EXIT SIGNAGE

Code Application:		Subclass/Savings:	Project Location:
NFPA	101-47	Not Applicable	Area Wide: Floor(s) 1
IBC	1011		

Description

The egress pathway in the office suite area is not clearly designated by exit signs. It is recommended that new LED-type battery backup exit signs be installed.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new battery pack LED exit signs, including all connections and extension of power	SF	2,000	$0.78	$1,560	$0.40	$800	$2,360
			Base Material/Labor Costs	**$1,560**		**$800**	
			Indexed Material/Labor Costs	**$1,551**		**$806**	**$2,357**
					Construction Mark Up at 20.0%		**$471**
					Original Construction Cost		**$2,828**
Date of Original Estimate: 10/27/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$2,828**
					Professional Fees at 16.0%		**$453**
					TOTAL PROJECT COST		**$3,281**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	5400AC01	**Category Code:** AC3F	
Priority Sequence:	3		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/27/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The dual-level drinking fountains, which are otherwise compliant, are missing the required guards and should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$932**		**$3,321**	
			Indexed Material/Labor Costs	**$927**		**$3,348**	**$4,275**
						Construction Mark Up at 20.0%	**$855**
						Original Construction Cost	**$5,130**
Date of Original Estimate: 10/27/2018						**Inflation**	**$0**
						Current Year Construction Cost	**$5,130**
						Professional Fees at 16.0%	**$821**
						TOTAL PROJECT COST	**$5,950**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				5,070	SF	$119,819	2011	25		2036
WN03	GLASS, CURTAIN WALL, STANDARD				2,100	SF	$398,038	2011	60		2071
WN05	GLASS, STOREFRONT				2,100	SF	$296,490	2011	40		2051
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				3	LEAF	$9,067	2011	25		2036
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				3	LEAF	$6,020	2011	40		2051
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				3	EA	$2,839	2011	12		2023
DR36	DOOR PANIC HARDWARE, EXTERIOR				3	EA	$3,561	2011	12		2023
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH				8,500	SF	$123,239	2011	20		2031
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM				8,000	SF	$136,692	2011	40		2051
RR23	ROOF SKYLIGHT - PLASTIC DOME				216	SF	$39,101	2011	20		2031
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				13	LEAF	$28,749	2011	60		2071
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				7	LEAF	$25,680	2011	60		2071
DR03	DOOR - OVERHEAD, INTERIOR	FOLDING WALL			240	SF	$25,006	2011	45		2056
DR03	DOOR - OVERHEAD, INTERIOR	FIRE SHUTTER			144	SF	$15,003	2011	45		2056
DR04	DOOR, SLIDING SYSTEM, INTERIOR				2	EA	$36,798	2011	25		2036
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED			13	EA	$9,788	2011	35		2046

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			7	EA	$5,270	2011	35		2046
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRMS, BRK RMS	60	LF	$33,653	2011	30		2041
CW02	CASEWORK - WOOD BASE AND WALL, TOP, PREMIUM			RECEPTION	20	LF	$17,205	2011	40		2051
IW01	WALL FINISH - APPLIED, STANDARD				13,310	SF	$37,148	2011	12		2023
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				830	SF	$33,616	2011	60		2071
IW08	WALL FINISH - WOOD PANEL, STANDARD				2,500	SF	$52,130	2011	40		2051
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				9,090	SF	$31,793	2011	10		2021
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	TILES			4,640	SF	$51,644	2011	45		2056
IC02	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, PREMIUM	WOOD CEILING			820	SF	$11,076	2011	45		2056
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				3,640	SF	$10,159	2011	24		2035
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				1	EA	$2,694	2011	25		2036
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				10	EA	$13,512	2011	35		2046
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	$773	2011	20		2031
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				1	EA	$1,664	2011	50		2061
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				1	EA	$1,138	2011	35		2046
FX10	PLUMBING FIXTURE - URINAL				2	EA	$2,157	2011	35		2046

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				8	EA	$13,560	2011	35		2046
BF01	BACKFLOW PREVENTER (<=1 INCH)	ZURN WILKENS		107A	1	EA	$1,006	2011	20		2031
BF02	BACKFLOW PREVENTER (1-2 INCHES)	ZURN WILKENS	0000003485	107A	1	EA	$2,793	2011	20		2031
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				12,800	SF	$146,571	2011	50		2061
TK06	EXPANSION TANK, STL PT (<20 GAL)	DET-1	0000003480	M2-01	15	GAL	$1,512	2011	30		2041
WH12	WATER HEATER - COMMERCIAL, ELECTRIC (30-70 GAL)	EWH-1	0000003473	M2-01	50	GAL	$11,402	2011	30		2041
WH12	WATER HEATER - COMMERCIAL, ELECTRIC (30-70 GAL)	HPWH-1	0000003474	M2-01	50	GAL	$11,402	2011	30		2041
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR		102A	1	EA	$990	2011	10		2021
PD02	DRAIN PIPING SYSTEM - CLASSROOM				12,800	SF	$219,908	2011	60		2071
BL13	BOILER - ELECTRIC (151-310 MBH)	B-1	0000003475	M2-01	256	MBH	$20,435	2011	28		2039
CH07	CHILLER - AIR COOLED PACKAGE (<=35 TONS)	AIRSTACK	0000003891	ROOF	15	TON	$48,744	2011	30		2041
CH07	CHILLER - AIR COOLED PACKAGE (<=35 TONS)	AIRSTACK	0000003892	ROOF	15	TON	$48,744	2011	30		2041
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	LG	0000003500	ROOF	1	TON	$3,435	2011	25		2036
HU06	EVAPORATOR UNIT, NO HEAT (<=1.5 TON)	LG	0000006785	104	1	TON	$4,455	2011	30		2041
HU17	DUCTLESS DX SPLIT SYSTEM (<=1 TON)		0000003500	ROOF	1	TON	$2,953	2011	25		2036
HU22	PTAC, DX/ HP COOL, ELEC HEAT (0.5-1.25 TON)	AIR DOOR		V1-01	1	TON	$2,283	2011	25		2036

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HRV-6 SUP	0000003455	M2-01	1	HP	$8,882	2011	35		2046
AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	HRV-7 SUP	0000003456	M2-01	1	HP	$8,882	2011	35		2046
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	HRV-5 SUP	0000003454	M2-01	2	HP	$19,228	2011	35		2046
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-1	0000003894	112	450	CFM	$3,883	2011	25		2036
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-2	0000003895	111	450	CFM	$3,883	2011	25		2036
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-3	0000003896	110	450	CFM	$3,883	2011	25		2036
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-4	0000003900	102A	450	CFM	$3,883	2011	25		2036
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-5	0000003460	M2-01	2,000	CFM	$17,256	2011	25		2036
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-6	0000003461	M2-01	1,000	CFM	$8,628	2011	25		2036
AH30	ENTHALPY WHEEL, ENERGY RECOVERY, AIR TO AIR (<=2000 CFM)	HRV-7	0000003462	M2-01	1,000	CFM	$8,628	2011	25		2036
AH44	HEAT PUMP, WATER-SOURCE	WSHP1	0000003893	103	2	TON	$7,861	2011	25		2036
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRV5 EXHAUST	0000003457	M2-01	2	HP	$2,642	2011	35		2046
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRV5 EXHAUST	0000003458	M2-01	1	HP	$1,321	2011	35		2046
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	HRV7 EXHAUST	0000003459	M2-01	1	HP	$1,321	2011	35		2046
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				12,800	SF	$455,350	2011	45		2056
PH01	PUMP - ELECTRIC (<=10 HP)	P-2	0000006776	M2-01	1	HP	$2,539	2011	30		2041

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	P-1	0000006777	M2-01	1	HP	$2,539	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-7	0000006770	103	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-8	0000006774	103	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-9	0000006773	103	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-10	0000006772	103	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-11	0000006769	103	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-12	0000006771	103	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-13	0000006782	107	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-14	0000006779	107	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-15	0000006781	107	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	P-16	0000006780	107	1	HP	$1,693	2011	30		2041
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000006775	M2-01	1	HP	$1,693	2011	30		2041
TK20	EXPANSION TANK, STL PT (<20 GAL)	ET-1	0000003481	M2-01	15	GAL	$1,512	2011	30		2041
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				12,800	SF	$43,363	2011	20		2031
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				12,800	SF	$12,067	2011	10		2021
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				12,800	SF	$6,412	2011	10		2021

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FS01	FIRE SPRINKLER SYSTEM - WET		0000003486		12,800	SF	$173,167	2011	80		2091
FA01	FIRE ALARM SYSTEM - DEVICES		0000003494		12,800	SF	$55,015	2011	18		2029
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT	0000003494	104	1	EA	$2,254	2011	18		2029
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		104	1	EA	$2,254	2011	18		2029
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		104	1	EA	$2,254	2011	18		2029
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				12,800	SF	$317,864	2011	50		2061
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDP	0000003495	105	1,200	AMP	$89,981	2011	40		2051
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-1	0000003478	M2-01	1	HP	$1,090	2011	15		2026
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-2	0000003479	M2-01	1	HP	$1,090	2011	15		2026
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-5 SUP	0000003463	M2-01	2	HP	$1,453	2011	15		2026
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-6 SUP	0000003464	M2-01	1	HP	$727	2011	15		2026
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-7 SUP	0000003465	M2-01	1	HP	$727	2011	15		2026
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			20	EA	$15,432	2011	20		2031
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	2	EA	$3,895	2011	40		2051
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	2	EA	$2,503	2011	20		2031
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				12,800	SF	$143,740	2011	20		2031

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				9,600	SF	$22,047	2011	20		2031
GN01	GENERATOR - DIESEL (<30 KW)	CUMMINS	0000003499	SITE	20	KW	$31,229	2011	25		2036
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	ATS	0000003497	105	40	AMP	$2,364	2011	25		2036
GN10	SWITCH - AUTO TRANSFER, 208 OR 240 V (30-100 AMP)	ATS	0000003498	105	40	AMP	$2,364	2011	25		2036
PV01	PHOTOVOLTAIC SOLAR GRID (100 to 500 SF)	FRONIUS		ROOF	2,640	SF	$312,773	2011	15		2026
PV02	POWER INVERTER, DC TO AC	PV-01	0000003471	M2-01	1	EA	$6,791	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-02	0000003472	M2-01	1	EA	$6,791	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-03	0000004067	M2-01	1	EA	$6,791	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-04	0000004068	M2-01	1	EA	$6,791	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-05	0000004069	M2-01	1	EA	$6,791	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-06	0000004070	M2-01	1	EA	$6,791	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-07	0000004071	M2-01	1	EA	$3,395	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-08	0000004072	M2-01	1	EA	$3,395	2011	20		2031
PV02	POWER INVERTER, DC TO AC	PV-09	0000004073	M2-01	1	EA	$3,395	2011	20		2031
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SVC CRT & DRV			740	SY	$2,921	2011	7		2018

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$4,002,369				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 5400 for DR

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SVC CRT & DRV	740	SY	$2,921	2018
2018		PROJECTED COMPONENT REPLACEMENT COST			$2,921	

No Projected Component Replacement Cost for Asset No. 5400 for 2019

No Projected Component Replacement Cost for Asset No. 5400 for 2020

2021						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		9,090	SF	$34,741	2021
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		12,800	SF	$7,006	2021
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		12,800	SF	$13,186	2021
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSINKERATOR	1	EA	$1,082	2021
2021		PROJECTED COMPONENT REPLACEMENT COST			$56,015	

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 5400 for 2022

2023						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3010	WALL FINISH - APPLIED, STANDARD		13,310	SF	$43,065	2023
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		3	EA	$3,292	2023
B2030	DOOR PANIC HARDWARE, EXTERIOR		3	EA	$4,128	2023
	2023	PROJECTED COMPONENT REPLACEMENT COST			$50,485	

No Projected Component Replacement Cost for Asset No. 5400 for 2024

No Projected Component Replacement Cost for Asset No. 5400 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-1	1	HP	$1,381	2026
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	P-2	1	HP	$1,381	2026
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-5 SUP	2	HP	$1,841	2026
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-6 SUP	1	HP	$920	2026

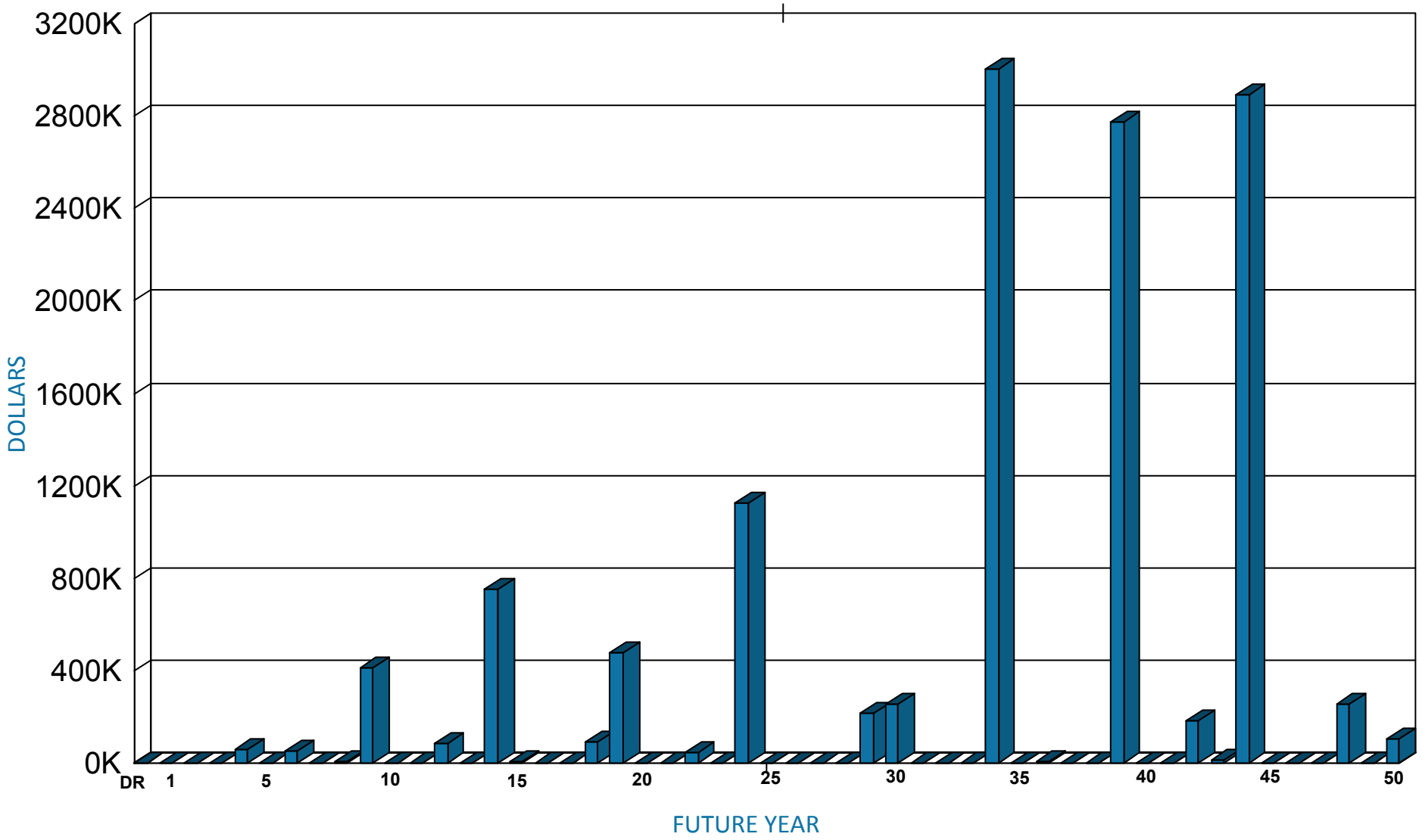
COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HRV-7 SUP	1	HP	$920	2026
D5090	PHOTOVOLTAIC SOLAR GRID (100 to 500 SF)	FRONIUS	2,640	SF	$396,212	2026
	2026	**PROJECTED COMPONENT REPLACEMENT COST**			**$402,654**	

No Projected Component Replacement Cost for Asset No. 5400 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $7.64

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

NEWBERG CENTER

BLDG NO. 5400

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 1

SECTION 6

PHOTOGRAPHS

5400001a 8/24/2018

Roof walk pads and skylight

South roof

5400001e 8/24/2018

HVAC unit

Penthouse

5400002a 8/24/2018

Roof drain and overflow drain

South roof

5400002e 8/24/2018

HVAC unit

Penthouse

5400003a 8/24/2018

Roof parapet and flashing

South roof

5400003e 8/24/2018

HVAC unit

Penthouse

5400004a 8/24/2018
Skylight and fall protection tie-off
South roof

5400004e 8/24/2018
Inverters and panelboard
Penthouse

5400005a 8/24/2018
Wall finish and gutter
South roof

5400005e 8/24/2018
Water heaters
Penthouse

5400006a 8/24/2018
Gutter at the standing seam roof
South roof

5400006e 8/24/2018
Pump equipment
Penthouse

5400007a 8/24/2018
Mechanical penthouse
Penthouse

5400007e 8/24/2018
Expansion tank
Penthouse

5400008a 8/24/2018
Stair with compliant railings
Penthouse

5400008e 8/24/2018
Boiler
Penthouse

5400009a 8/24/2018
Utility sink
Room 107

5400009e 8/24/2018
Pumps and variable frequency drives
Penthouse

5400010a 8/24/2018

Compliant room signage

Room 115

5400010e 8/24/2018

Inverters

Penthouse

5400011a 8/24/2018

Common area finishes

Room C1-03

5400011e 8/24/2018

Panelboard

Penthouse

5400012a 8/24/2018

Wood ceiling and wall finishes

Room C1-03

5400012e 8/24/2018

Heat recovery unit

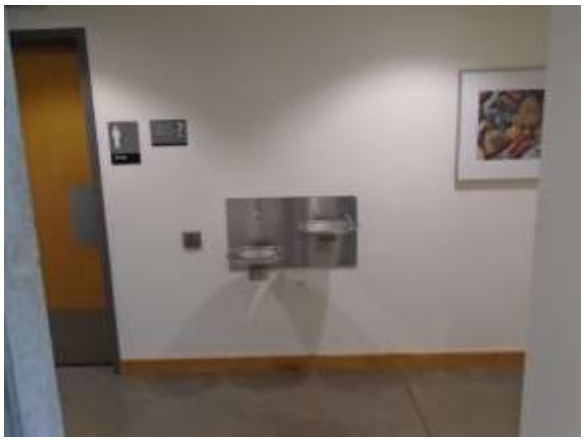
Penthouse

5400013a 8/24/2018
Accessible shower
Room T1-03

5400013e 8/24/2018
Interior lighting
Penthouse

5400014a 8/24/2018
Water closet, lavatory, and accessories
Room T1-03

5400014e 8/24/2018
Panelboard
Penthouse



5400015a 8/24/2018
Accessible drinking fountains without required cane guards or alcove walls
First floor

5400015e 8/24/2018
Fire extinguisher
Penthouse

5400016a 8/24/2018
Lavatories and area finishes
Room T1-02

5400016e 8/24/2018
Interior lighting
First floor, room C1-03

5400017a 8/24/2018
Urinals, screen, and area finishes
Room T1-02

5400017e 8/24/2018
Backflow preventer
First floor, room 107

5400018a 8/24/2018
Accessible water closet and accessories
Room T1-02

5400018e 8/24/2018
Backflow preventer
First floor, room 107

5400019a 8/24/2018
Standard water closet and partitions
Room T1-02

5400019e 8/24/2018
Standpipe
First floor, room 107

5400020a 8/24/2018
Main corridor finishes
Corridor C1-01

5400020e 8/24/2018
Heat recovery unit
First floor, room 107

5400021a 8/24/2018
Main corridor finishes, exit door, hardware, and signage
Corridor C1-01

5400021e 8/24/2018
Pump equipment
First floor, room 107

5400022a 8/24/2018
Typical classroom finishes
Room 111

5400022e 8/24/2018
Occupancy sensor
First floor, room 107

5400023a 8/24/2018
Typical classroom finishes
Room 111

5400023e 8/24/2018
Interior lighting
First floor, room 115

5400024a 8/24/2018
Detail at the building glazing system
Room 111

5400024e 8/24/2018
Interior lighting
First floor, room 116

5400025a 8/24/2018
Folding wall between rooms 115 and 116
Room 115

5400025e 8/24/2018
Drain piping
First floor, room 116

5400026a 8/24/2018
Ceiling
Room 115

5400026e 8/24/2018
Lavatories
First floor, women's restroom

5400027a 8/24/2018
Lavatories and area finishes
Room T1-01

5400027e 8/24/2018
Occupancy sensor
First floor, women's restroom

5400028a 8/24/2018
Accessible water closet and accessories
Room T1-01

5400028e 8/24/2018
Strobe and interior lighting
First floor, men's restroom

5400029a 8/24/2018
Door with powered door opener
Room T1-01

5400029e 8/24/2018
Pull station and fire extinguisher
First floor, corridor

5400030a 8/24/2018
Ceiling and wall finishes and clerestory windows
Corridor C1-01

5400030e 8/24/2018
Interior lighting
First floor, room 112

5400031a 8/24/2018
Overhead fire shutter track at the reception desk
Room 102

5400031e 8/24/2018
Ceiling fans
First floor, corridor

5400032a 8/24/2018
Work area casework
Room 102A

5400032e 8/24/2018
Interior lighting
First floor, room 111

5400033a 8/24/2018
Break area casework and sink
Room 102A

5400033e 8/24/2018
Air curtain
First floor, main entryway

5400034a 8/24/2018
Office suite exit door without exit sign
Room 102B

5400034e 8/24/2018
Annunciator
First floor, main entryway

5400035a 8/24/2018
Nonfirestopped penetrations
Room 104

5400035e 8/24/2018
Evaporator
First floor, room 104

5400036a 8/24/2018
Casework at the reception area
Room 102

5400036e 8/24/2018
Interior lighting
First floor, room 104

5400037a 8/24/2018

Asphalt-paved service court

North elevation

5400037e 8/24/2018

Fire alarm panel and Safeway panels

First floor, room 104

5400038a 8/24/2018

Asphalt-paved service court

North elevation

5400038e 8/24/2018

Generator panel

First floor, room 104

5400039a 8/24/2018

Exit and utility access doors

North elevation

5400039e 8/24/2018

Interior lighting

First floor, room 102B

5400040a 8/24/2018
Detail of glazing system
North elevation

5400040e 8/24/2018
Interior lighting
First floor, room 101B

5400041a 8/24/2018
Exterior wall panels and roof membrane
North roof

5400041e 8/24/2018
Switchboard
First floor, room 105

5400042a 8/24/2018
Roof and skylights
North roof

5400042e 8/24/2018
Panelboards
First floor, room 105

5400043a 8/24/2018
Roof overhang area with solar collector panels
North elevation

5400043e 8/24/2018
Automatic transfer switches and panelboard
First floor, room 105

5400044a 8/24/2018
Roof overhang area with solar collector panels
South elevation

5400044e 8/24/2018
Generator
Site

5400045a 8/24/2018
Through-wall overflow scupper
North roof

5400045e 8/24/2018
Pump equipment
First floor, room 103

5400046a 8/24/2018

Roof access

North roof

5400046e 8/24/2018

Air-cooled chiller

Roof

5400047a 8/24/2018

Entrance door and finishes

West elevation

5400047e 8/24/2018

Condensing unit

Roof

5400048a 8/24/2018

Building exterior and site conditions

West elevation

5400048e 8/24/2018

Solar panels

South elevation

5400049a 8/24/2018
Exterior finishes and site conditions
North elevation

5400049e 8/24/2018
Solar panels
South elevation

5400050a 8/24/2018
Exterior finishes and site conditions
West elevation

5400050e 8/24/2018
Solar panels
South elevation

5400051a 8/24/2018
Exterior finishes and site conditions
Southwest elevation

5400051e 8/24/2018
Exterior lighting
Site

5400052a 8/24/2018
Exterior finishes and site conditions
South elevation

5400052e 8/24/2018
Exterior lighting
Site

5400053a 8/24/2018
Entrance plaza
South elevation

5400053e 8/24/2018
Exterior lighting and solar panels
South elevation

5400054a 8/24/2018
Exterior finishes at the main entrance
South elevation

5400054e 8/24/2018
Exterior lighting and solar panels
South elevation

5400055a 8/24/2018

Exterior finishes at the main entrance

South elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	5400
Asset Name	Newberg Center
Year Built or Last Energy Renovation	2011

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

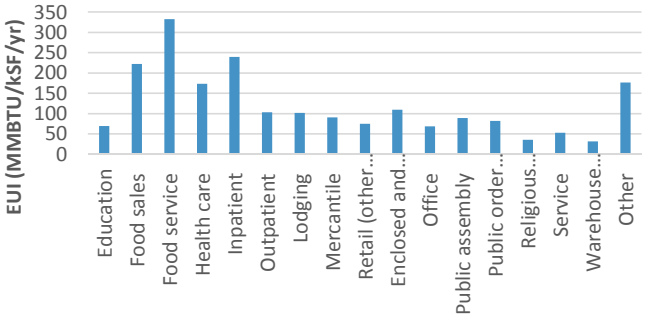
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

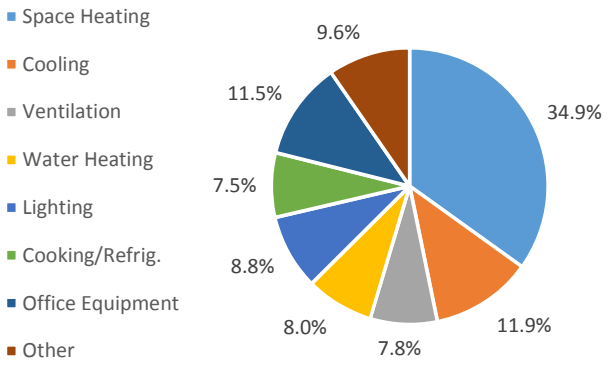


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
	No ECM recommendation	

PORTLAND COMMUNITY COLLEGE

Center

Facility Condition Assessment

Swan Island
Asset 5700

Inspected August 24, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

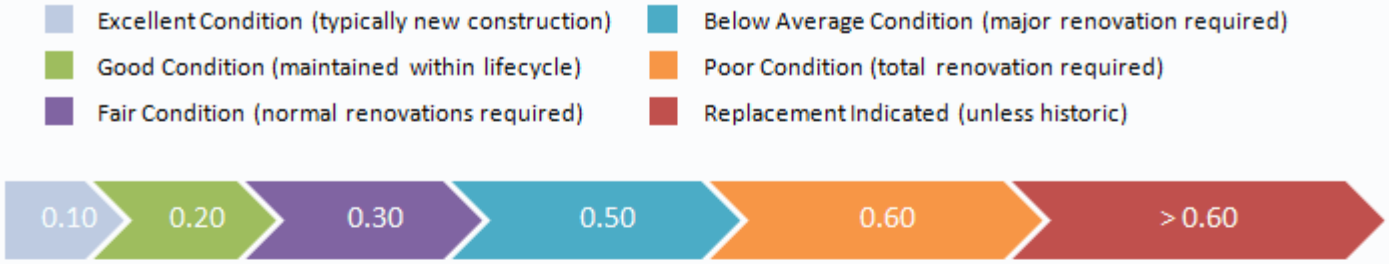
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

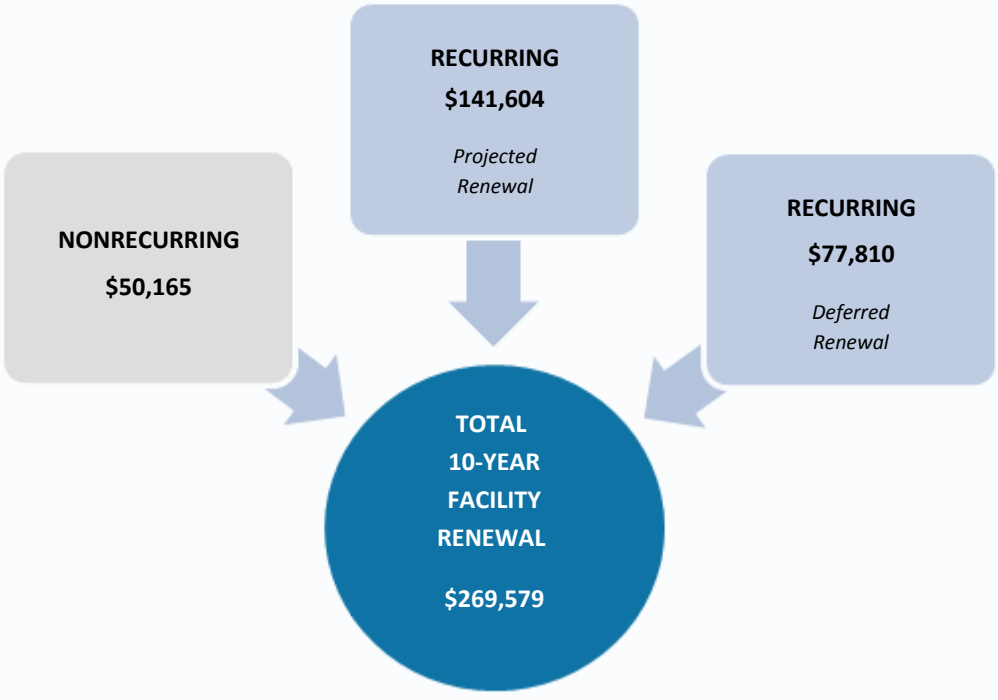
ASSET CODE	5700		
ASSET NAME	SWAN ISLAND	**CURRENT REPLACEMENT VALUE**	$9,913,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.03
YEAR BUILT	1993	**FACILITY CONDITION INDEX**	0.01
GSF	22,517	**10-YEAR $/SF**	11.97
INSPECTION DATE	08/24/2018		

FCNI Scale

The FCNI for this asset is **0.03**



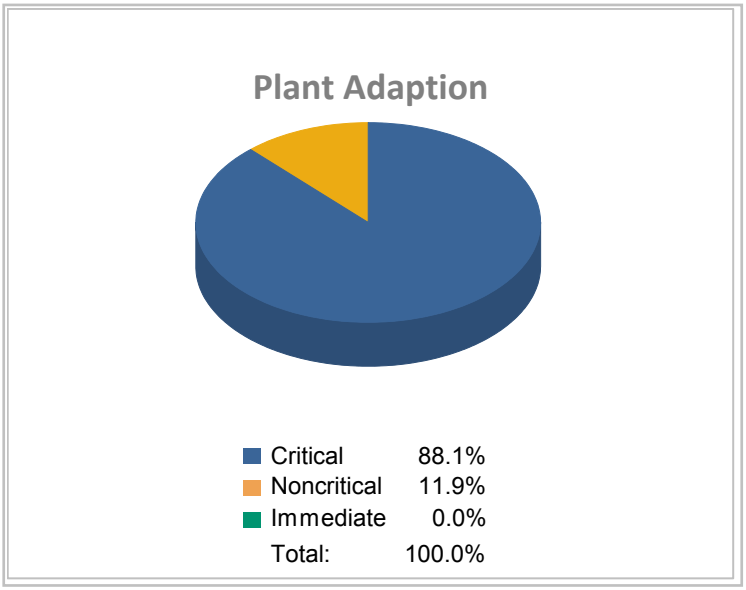
Total Facility Renewal Costs



Nonrecurring Costs

Project Cost by Priority

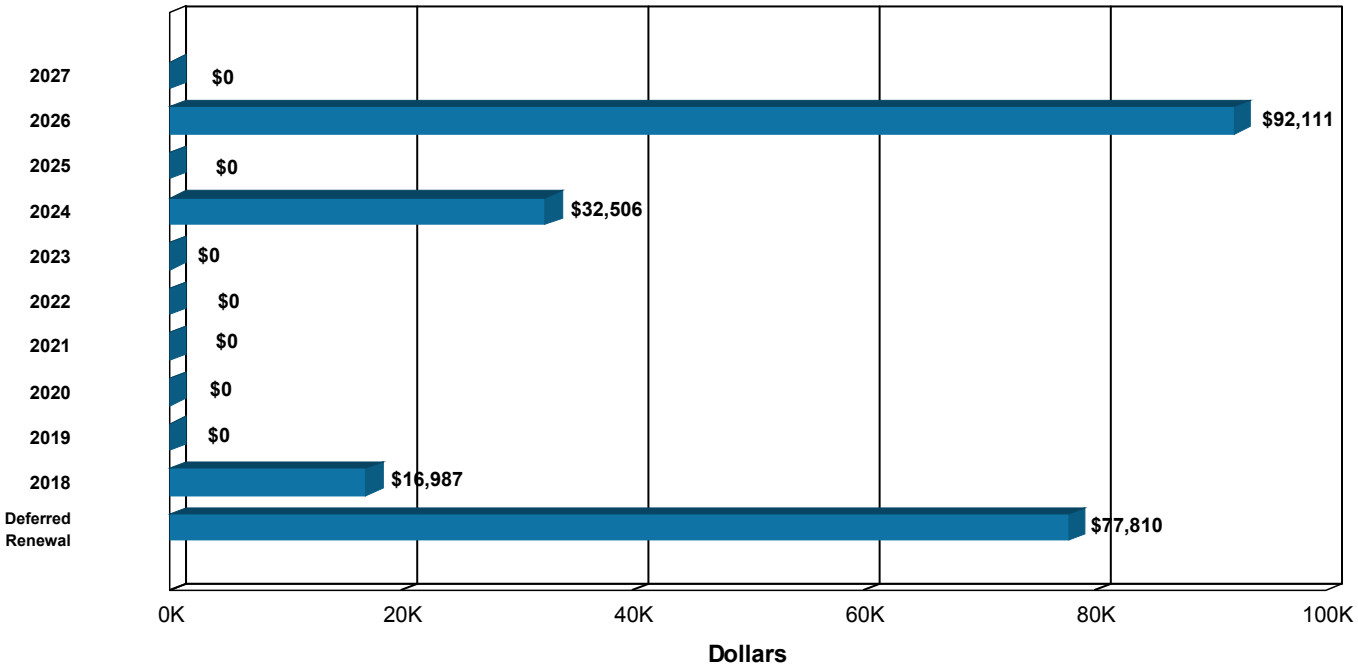
PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$44,214**
3 - Noncritical	**$5,950**



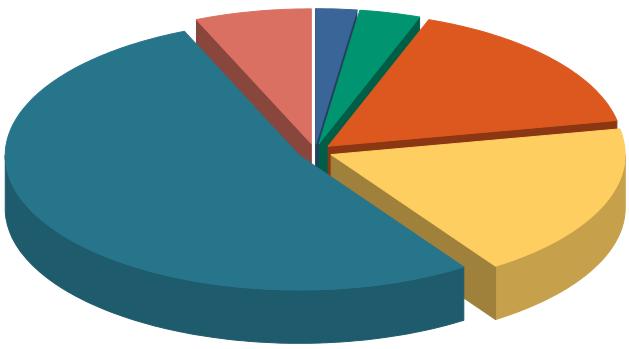
CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$0**

Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$5,950	2%
Electrical	$0	0%
Exterior	$9,015	3%
Fire/Life Safety	$44,214	16%
Health	$0	0%
HVAC	$50,052	19%
Interiors	$143,360	53%
Plumbing	$16,987	6%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$269,579**	

ASSET SUMMARY

Swan Island Center is a standalone building in the Portland Community College system of campuses. Originally built in 1993 as a vehicle maintenance facility for the City of Portland, the building was renovated and expanded in 2014 to its current 22,517 gross square foot area. The single-story building houses classrooms and shop areas for vocational training. It has multiple flat roof levels and an exterior of painted concrete and EIFS.

Information for this report was gathered during a site visit conducted on August 24, 2018.

Site

The building is located on a flat parcel of land on the corner of North Leverman Street and North Cutter Circle in the Swan Island industrial area of Portland, Oregon. Parking is provided by a large asphalt paved lot and pedestrian access to the building is from concrete sidewalks on two sides of the building. Landscaping consists of trees, shrubbery, and ground cover around the base of the building. The site is in good condition and there are no recommendations for improvements at this time.

Exterior Structure

The roof is an internally-drained, unballasted, single-ply membrane in good condition. Due to the proximity of a number of trees, the drains should be kept clear of leaves and other similar debris to prevent leaks due to blockage. Several skylights over the main lobby area appear to be in good condition and should outlast the scope of this report. The glazing systems are insulating glass storefront units that are in good condition. The exterior doors are aluminum and glass storefront along with overhead sectional and coiling steel doors and one flush hollow-metal door. All of the doors should last another ten or more years, but the associated hardware may need to be considered for replacement. Exterior walls are painted cast concrete or EIFS and in good condition.

Interior Finishes/Systems

Floor finishes are polished, sealed concrete or carpet. These finishes are recommended for replacement or renewal in the next ten years. Walls are painted or finished with ceramic tile. The ceramic tile should last another ten or more years, but it is recommended that all of the painted surfaces be repainted within that timeframe. Ceilings are mostly unfinished exposed structure with some areas of painted hard surfaces and suspended acoustical tile systems. The interior doors and casework are in good condition and should serve beyond the next ten years.

Accessibility

The major renovations and additions to this building in 2014 addressed accessibility issues to a great degree. Entrances are at grade and two entrances are equipped with powered door openers. Door hardware and signage are compliant and the restrooms provide the required accessible features. The break room casework is accessible and interior clearances provide adequate maneuvering space for wheelchair users. However, accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The dual-level drinking fountain in corridor C-4 which is otherwise compliant, is missing the required guards and should have cane guards or alcove walls added.

Health

There are emergency eyewash stations in select rooms in the event of a mishap. The equipment appears to be well marked and in good condition with no recommendations at this time.

Fire/Life Safety

Exit access corridors and exit doors are clearly marked with illuminated exit lights, and the exit pathways are clear of obstruction. Emergency lighting is believed to be contained in select overhead fixtures tied to the emergency power network. This would appear to be an adequate application for the facility.

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals along the roof to support life-lines and harness personal protective equipment.

This facility has a Silent Knight modern fire alarm system with the main addressable fire alarm panel in room MDF1-1. The system incorporates smoke detectors and pull stations for activation and audible visual strobes for notification. The system appears to provide adequate coverage and is well maintained. A Wheellock mass notification panel was also observed and is inventoried for information purposes. There are no recommendations at this time.

The facility is provided fire suppression by an automatic sprinkler system. Additional fire suppression is provided by wall-mounted manual chemical fire extinguishers. The fire suppression system appears to provide adequate coverage and is in good condition. There are no recommendations for the system.

HVAC

The facility has rooftop package heat pumps to provide heating and cooling comfort. The units are charged with DX refrigerant for cooling and electric resistance for heating. A Reznor makeup air unit with gas for heating serves a select are of the facility. Controls for the system are a digital application

and distribution equipment consists of metal ductwork. The HVAC system has substantial remaining service life, although a partial control upgrade should be scheduled.

Heating is also provided by four ceiling radiant heating units. These original units serve select classrooms and have reached lifecycle depletion. Additional cooling is provided by a split system in a select room. The system is new and has substantial remaining service life. Facility exhaust is provided by rooftop centrifugal fans. The exhaust fans serve restrooms and general exhaust needs. Based on age, the exhaust fans have remaining service life beyond the scope of this report.

Electrical

Power is supplied the facility at 480/277 volts via underground utilities. An exterior switchboard receives the power for distribution to an indoor switchboard or dry-type transformers. The switchboards have capacity ratings of 1,000 amps each. The main electrical equipment appears well maintained and has substantial remaining life. The electrical distribution network in this facility is a dual-voltage configuration. The 277/480 volt power is distributed to branch transformers that step the power down to 120/208 volt power. The lighting and major mechanical systems are supported by the 277/480 volt circuit. The panels were manufactured by Siemens and the system appears to be in good condition with substantial remaining service life.

The interior lighting consists of lay-in, surface-mount, and suspended fixtures equipped with parabolic, acrylic, or no lenses and lamped with T8 fluorescent bulbs. Additional lighting is provided by can-type fixtures with compact fluorescent bulbs. Occupancy sensors are present to conserve energy. The interior lighting scheme appears to be in good condition and, based on age, has remaining service life beyond the scope of this report.

Exterior lighting consists of eave-mounted can, wall-mounted non-HID, and wall-mounted HID fixtures. Additional lighting is provided by pole-mounted fixtures on the site. The fixtures appear to be well maintained and are in good condition. There are no recommendations at this time.

Emergency power is provided by a Caterpillar diesel-fired generator on the site. Two automatic transfer switches (ATS) deliver the emergency power to the facility. The generator and switches appear to be well maintained and are in good condition with remaining service life beyond the scope of this report.

A variable frequency drive (VFD) on the exhaust fan controls motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The VFD was installed in 2014 and appears to be well maintained with no recommendations.

Plumbing

The domestic water system is supplied through a copper piping network. Backflow preventers prevent cross contamination of the water system. Drain piping is believed to be constructed of cast-iron with no hub connections. The piping systems, where they could be viewed, appear to be in adequate condition. Based on age, the piping systems and backflow preventers have substantial remaining service life.

Domestic hot water is produced by a Bradford White, commercial-grade, gas-fired water heater that was installed in 2014 and has a tank capacity of 60 gallons. A small pump and expansion tank support the water heater. The domestic water heating equipment is new and in excellent condition with no recommendations. A utility compressor supports the needs of the shops. Manufactured in 1993, it appears to be well maintained but will reach lifecycle depletion in the next few years and may need to be replaced.

The plumbing fixtures consist of drinking fountains, water closets, urinals, lavatories, kitchen sinks, and utility sinks. All of these fixtures are within their normal lifecycle and should last another ten or more years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

Carl Mason, PE, BSCP, M.ASCE
770.674.3141
carlm@isescorp.com

Date of Inspection

August 24, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
John Holder	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Joseph O. Rogers, III, AIA	Senior Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	5,950	0	0	0	0	0	0	0	0	0	0	0	$5,950
EXTERIOR	0	0	0	0	0	0	0	0	0	0	0	0	9,015	0	$9,015
INTERIOR	0	0	0	60,264	0	0	0	0	0	0	0	0	83,096	0	$143,360
PLUMBING	0	0	0	0	16,987	0	0	0	0	0	0	0	0	0	$16,987
HVAC	0	0	0	17,546	0	0	0	0	0	0	32,506	0	0	0	$50,052
FIRE/LIFE SAFETY	0	44,214	0	0	0	0	0	0	0	0	0	0	0	0	$44,214
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$44,214	$5,950	$77,810	$16,987	$0	$0	$0	$0	$0	$32,506	$0	$92,111	$0	$269,579
TOTAL NONRECURRING PROJECT NEEDS			$50,165	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$219,414	

CURRENT REPLACEMENT VALUE	$9,913,000
FACILITY CONDITION NEEDS INDEX	0.03
FACILITY CONDITION INDEX	0.01

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
22,517	$269,579	$11.97

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$5,950	$0	$5,950
EXTERIOR	$0	$9,015	$9,015
INTERIOR	$0	$143,360	$143,360
PLUMBING	$0	$16,987	$16,987
HVAC	$0	$50,052	$50,052
FIRE/LIFE SAFETY	$44,214	$0	$44,214
ELECTRICAL	$0	$0	$0
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$50,165**	**$219,414**	**$269,579**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
5700FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	44,214
5700AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	5,950
				TOTAL	**$50,165**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5700	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				C3020	Deferred Renewal	60,264
5700	HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000003992	119	D3040	Deferred Renewal	4,387
5700	HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000003993	120	D3040	Deferred Renewal	4,387
5700	HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000004002	122	D3040	Deferred Renewal	4,387
5700	HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000004003	122	D3040	Deferred Renewal	4,387
5700	FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				D2010	2018	3,443
5700	PG16	AIR COMPRESSOR - UTILITY (>5 HP)	CAMPBELL	0000003946	M1-01	D2090	2018	13,544
5700	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				D3060	2024	21,227
5700	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				D3060	2024	11,279
5700	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				B2030	2026	1,893
5700	DR36	DOOR PANIC HARDWARE, EXTERIOR				B2030	2026	7,122
5700	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2026	60,342
5700	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				C3020	2026	22,754
							TOTAL	**$219,414**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

PLANT ADAPTION				
PRI SEQ	**PROJECT NUMBER**	**PROJECT TITLE**	**PRI CLS**	**TOTAL COST**
1	5700FS01	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	2	$44,214
2	5700AC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	$5,950
		TOTAL FOR PLANT ADAPTION		**$50,165**
		GRAND TOTAL:		**$50,165**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
2	5700AC01	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	$5,950
				TOTAL FOR ACCESSIBILITY	**$5,950**
1	5700FS01	2	Plant Adaption	ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION	$44,214
				TOTAL FOR FIRE/LIFE SAFETY	**$44,214**
				GRAND TOTAL:	**$50,165**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

ADD ROPE PINTLES TO SUPPORT WORKER FALL PROTECTION

Project Number:	5700FS01	**Category Code:** FS6A	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	10/29/2018	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofs over ten feet above grade to protect workers. The installation of hard looped tie-off points is recommended at intervals along the roof to support life-lines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope pintles to support PPE equipment on roof	EA	40	$304	$12,160	$488	$19,520	$31,680
Base Material/Labor Costs				**$12,160**		**$19,520**	
Indexed Material/Labor Costs				**$12,087**		**$19,676**	**$31,763**
Construction Mark Up at 20.0%							**$6,353**
Original Construction Cost							**$38,116**
Date of Original Estimate: 10/29/2018						**Inflation**	**$0**
Current Year Construction Cost							**$38,116**
Professional Fees at 16.0%							**$6,099**
TOTAL PROJECT COST							**$44,214**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	5700AC01	**Category Code:** AC3F	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	10/29/2018	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Floor-wide: Floor(s) 1

Description

Accessibility legislation requires that objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path. Any protrusion exceeding these limits should be provided with cane guards or flanked by walls. The dual-level drinking fountain in corridor C-4 is otherwise compliant but missing the required guards and should have cane guards or alcove walls added.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	1	$932	$932	$3,321	$3,321	$4,254
			Base Material/Labor Costs	**$932**		**$3,321**	
			Indexed Material/Labor Costs	**$927**		**$3,348**	**$4,275**
					Construction Mark Up at 20.0%		**$855**
					Original Construction Cost		**$5,130**
Date of Original Estimate: 10/29/2018					**Inflation**		**$0**
					Current Year Construction Cost		**$5,130**
					Professional Fees at 16.0%		**$821**
					TOTAL PROJECT COST		**$5,950**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW11	WALL, EXTERIOR, EIFS				3,270	SF	$102,223	2014	40		2054
WN05	GLASS, STOREFRONT				1,650	SF	$207,997	2014	40		2054
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS				7	LEAF	$21,156	2014	25		2039
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL				1	LEAF	$2,007	2014	40		2054
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				120	SF	$12,503	2014	30		2044
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK				192	SF	$20,005	2014	30		2044
DR28	DOOR OPERATOR, POWER-ASSIST	EXTERIOR			6	EA	$40,622	2014	20		2034
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR			2	EA	$13,541	2014	20		2034
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS				2	EA	$4,189	2014	30		2044
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR				2	EA	$1,893	2014	12		2026
DR36	DOOR PANIC HARDWARE, EXTERIOR				6	EA	$7,122	2014	12		2026
RR03	ROOF - 1-PLY, UNBALLASTED				22,517	SF	$266,479	2014	20		2034
RR26	ROOF SKYLIGHT - GLASS WITH ALUMINUM FRAME				54	SF	$15,453	2014	35		2049
DR01	DOOR AND FRAME, INTERIOR, NON-RATED				20	LEAF	$44,229	2014	60		2074
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED				22	LEAF	$80,708	2014	60		2074
DR03	DOOR - OVERHEAD, INTERIOR				600	SF	$62,514	2014	45		2059

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	NONRATED			20	EA	$15,058	2014	35		2049
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	RATED DRS			22	EA	$16,564	2014	35		2049
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			WRKRM & BRKRM	28	LF	$15,705	2014	30		2044
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD			SHOP CLASSES	100	LF	$56,088	2014	30		2044
IW01	WALL FINISH - APPLIED, STANDARD				21,620	SF	$60,342	2014	12		2026
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD				670	SF	$27,136	2014	60		2074
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD				1,910	SF	$22,754	2014	12		2026
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL				17,230	SF	$60,264	1993	10	14	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				2,810	SF	$31,276	2014	45		2059
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				1,000	SF	$2,791	2014	24		2038
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				2	EA	$5,388	2014	25		2039
FX01	PLUMBING FIXTURE - LAVATORY, COUNTER				4	EA	$3,443	1993	25		2018
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				5	EA	$6,756	2014	35		2049
FX04	PLUMBING FIXTURE - SINK, KITCHEN				1	EA	$773	2014	20		2034
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				1	EA	$1,664	1993	50		2043
FX10	PLUMBING FIXTURE - URINAL				2	EA	$2,157	2014	35		2049

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				9	EA	$15,255	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			135	1	EA	$1,080	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			133	1	EA	$1,080	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			131	1	EA	$1,080	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			124	1	EA	$1,080	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			122	1	EA	$1,080	2014	35		2049
FX15	PLUMBING FIXTURE - EMERGENCY EYEWASH			120	1	EA	$1,080	2014	35		2049
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS	0000003948	114	1	EA	$1,006	2014	20		2034
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATTS	0000003995	SITE	1	EA	$1,006	2014	20		2034
PS02	SUPPLY PIPING SYSTEM - CLASSROOM				22,517	SF	$257,840	1993	50		2043
TK06	EXPANSION TANK, STL PT (<20 GAL)	WATTS	0000005502	114	10	GAL	$1,008	2014	30		2044
WH02	WATER HEATER - COMMERCIAL, GAS (<87-168 MBH INPUT)	BRADFORD WHITE	0000005501	114	125	MBH	$11,667	2014	25		2039
PD02	DRAIN PIPING SYSTEM - CLASSROOM				22,517	SF	$386,849	1993	60		2053
PG16	AIR COMPRESSOR - UTILITY (>5 HP)	CAMPBELL	0000003946	M1-01	7	HP	$13,544	1993	25		2018
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	MITSUBISHI	0000005504	ROOF	2	TON	$3,160	2014	25		2039
HU07	EVAPORATOR UNIT, NO HEAT (1.5-2 TON)	MITSUBISHI	0000005503	MDF1-1	2	TON	$3,207	2014	30		2044

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH25	AIR HANDLING UNIT - OUTDOOR MAKEUP, GAS (140-208 MBH INPUT)	REZNOR	0000005509	ROOF	200	MBH	$16,322	2014	25		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-1	0000009343	ROOF	1	EA	$3,773	2014	25		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-2	0000009344	ROOF	1	EA	$3,773	2014	25		2039
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF-4	0000009306	ROOF	1	EA	$3,773	2014	25		2039
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EF-5	0000004075	ROOF	1	EA	$6,899	2014	25		2039
HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000003992	119	200	MBH	$4,387	1993	15	9	DR
HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000003993	120	200	MBH	$4,387	1993	15	9	DR
HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000004002	122	200	MBH	$4,387	1993	15	9	DR
HU29	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	0000004003	122	200	MBH	$4,387	1993	15	9	DR
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM				22,517	SF	$801,024	2014	45		2059
PH01	PUMP - ELECTRIC (<=10 HP)	DOM HOT WTR	0000009309	114	1	HP	$846	2014	30		2044
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-9	0000005508	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-10	0000005507	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-11	0000005506	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-12	0000005505	ROOF	3	TON	$12,722	2014	25		2039

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-1	0000005511	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-2	0000005512	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-3	0000005513	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-4	0000005514	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-5	0000005515	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-6	0000005516	ROOF	5	TON	$21,204	2014	25		2039
HU30	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (<= 5 TON)	HP-7	0000005517	ROOF	5	TON	$21,204	2014	25		2039
HU31	PACKAGE HVAC UNIT, DX, GAS OR ELECTRIC HEAT, SINGLE-ZONE (5- 9 TON)	HP-8	0000005518	ROOF	7	TON	$19,613	2014	25		2039
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM				22,517	SF	$76,282	2014	20		2034
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM				22,517	SF	$21,227	2014	10		2024
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM				22,517	SF	$11,279	2014	10		2024
FS01	FIRE SPRINKLER SYSTEM - WET				22,517	SF	$304,624	2014	80		2094
FA01	FIRE ALARM SYSTEM - DEVICES			MDF1-1	22,517	SF	$96,779	2014	18		2032
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	SILENT KNIGHT		MDF1-1	1	EA	$2,254	2014	18		2032
FA02	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 50 POINTS	WHEELOCK		MDF1-1	1	EA	$2,254	2014	18		2032
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM				22,517	SF	$559,167	2014	50		2064

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	SWBD-4A	0000006963	SITE	1,000	AMP	$74,984	2014	40		2054
SG04	MAIN SWITCHBOARD W/BREAKERS (800-1200 AMP)	MDP-4A	0000006426	E1-01	1,000	AMP	$74,984	2014	40		2054
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)		0000005510	ROOF	2	HP	$1,453	2014	15		2029
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	WALL-MOUNT			2	EA	$1,017	2014	20		2034
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	EAVE-MOUNT			4	EA	$2,034	2014	20		2034
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)	WALL-MOUNT			4	EA	$3,086	2014	20		2034
LE04	COM EXTERIOR BOLLARD LIGHTING			SITE	8	EA	$10,528	2014	20		2034
LE06	COM EXTERIOR POLE ONLY - SHORT (<=20 FT, POLE, 2 ARMS)			SITE	5	EA	$9,738	2014	40		2054
LE07	COM EXTERIOR POLE ARM FIXTURE STD (LPS, HPS, MH) NO POLE OR ARM			SITE	5	EA	$6,257	2014	20		2034
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM				22,517	SF	$252,858	2014	20		2034
LI24	OCCUPANCY SENSING AND TIMER LIGHTING CONTROL				16,000	SF	$36,745	2014	20		2034
GN02	GENERATOR - DIESEL (<30-100KW)	CATERPILLAR	0000003870		50	KW	$48,829	2011	25		2036
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-EM	0000005519	EAST ELV	80	AMP	$4,422	2014	25		2039
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS-SB	0000005520	EAST ELV	80	AMP	$4,422	2014	25		2039

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
					Grand Total:	$4,635,374				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		17,230	SF	$60,264	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	200	MBH	$4,387	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	200	MBH	$4,387	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	200	MBH	$4,387	DR
D3040	UNIT HEATER - INDOOR, GAS, SUSPENDED (>180 MBH)	RADIANT HTR CEILING	200	MBH	$4,387	DR
				TOTAL DEFERRED RENEWAL COST	$77,810	

2018						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2010	PLUMBING FIXTURE - LAVATORY, COUNTER		4	EA	$3,443	2018
D2090	AIR COMPRESSOR - UTILITY (>5 HP)	CAMPBELL	7	HP	$13,544	2018
		2018	PROJECTED COMPONENT REPLACEMENT COST		$16,987	

No Projected Component Replacement Cost for Asset No. 5700 for 2019

No Projected Component Replacement Cost for Asset No. 5700 for 2020

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 5700 for 2021

No Projected Component Replacement Cost for Asset No. 5700 for 2022

No Projected Component Replacement Cost for Asset No. 5700 for 2023

2024						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM		22,517	SF	$13,468	2024
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM		22,517	SF	$25,346	2024
	2024	PROJECTED COMPONENT REPLACEMENT COST			$38,814	

No Projected Component Replacement Cost for Asset No. 5700 for 2025

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		1,910	SF	$28,825	2026
C3010	WALL FINISH - APPLIED, STANDARD		21,620	SF	$76,439	2026

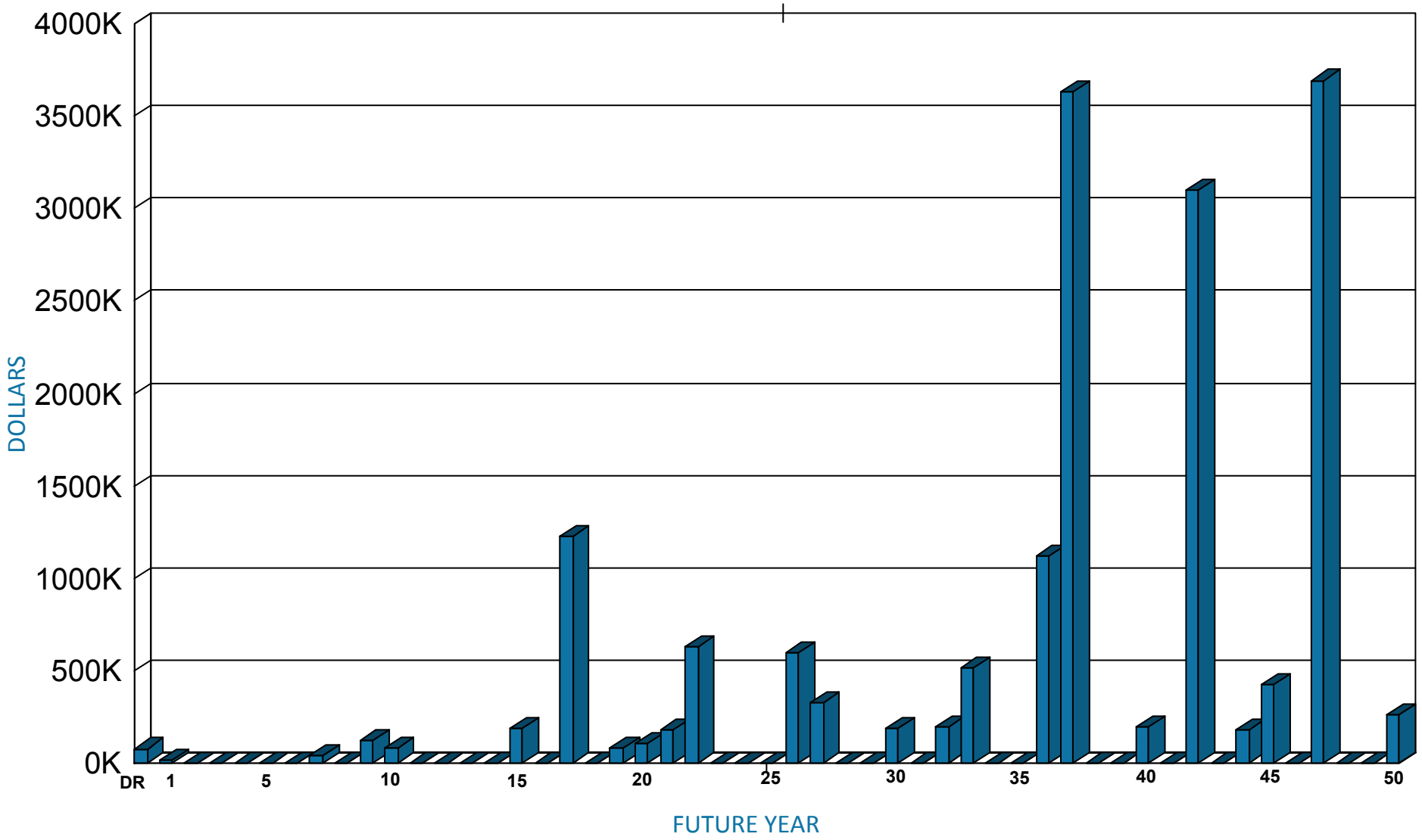
COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR		2	EA	$2,398	2026
B2030	DOOR PANIC HARDWARE, EXTERIOR		6	EA	$9,022	2026
2026	**PROJECTED COMPONENT REPLACEMENT COST**				**$116,683**	

No Projected Component Replacement Cost for Asset No. 5700 for 2027

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $5.36

FACILITY CONDITION ASSESSMENT

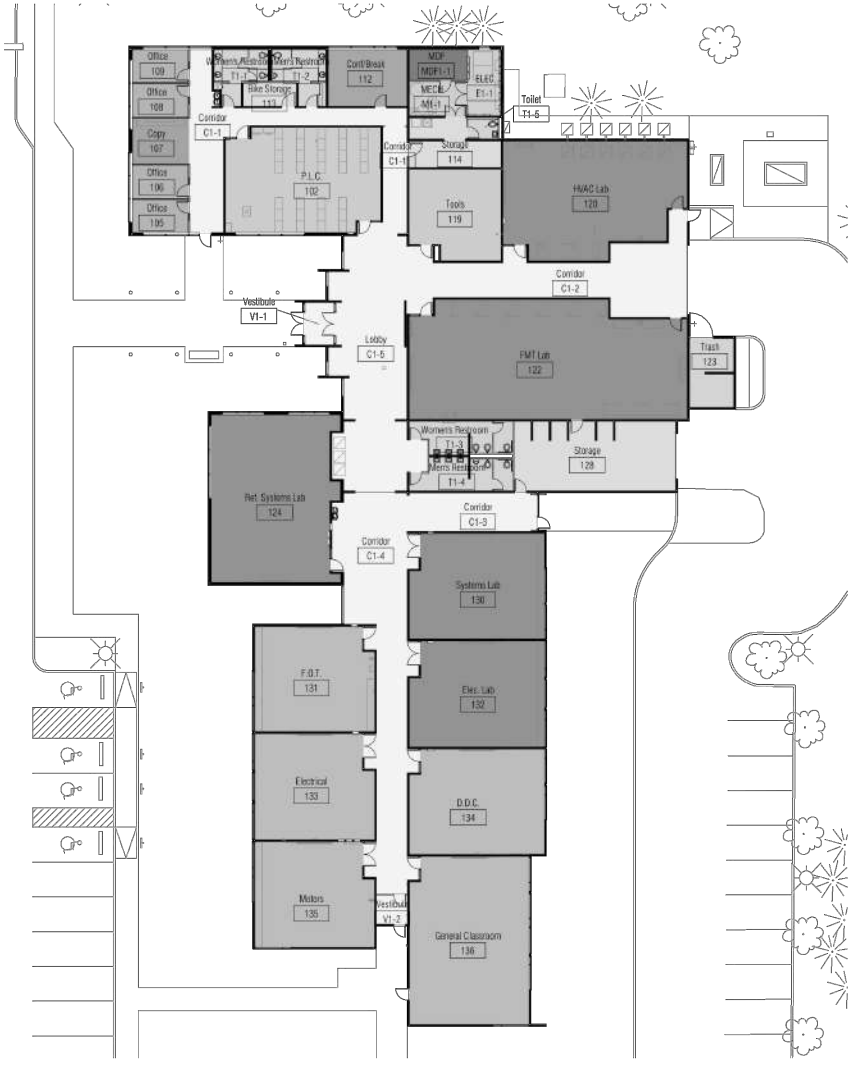
SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

ROOF

FS01



AC01

SWAN ISLAND

BLDG NO. 5700

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 1

SECTION 6

PHOTOGRAPHS

3070001a 8/28/2018
Modified-bitumen roof and EIFS on penthouse
Roof

3070001e 8/28/2018
One of two, original, variable-volume, single-zone, four-pipe AHUs
Penthouse one

3070002a 8/28/2018
Deteriorated EIFS siding
Penthouse

3070002e 8/28/2018
One of two VRV ductless DX systems
Roof

3070003a 8/28/2018
Concrete floor and unfinished walls
Penthouse

3070003e 8/28/2018
Centrifugal exhaust fan for general exhaust
Roof

3070004a 8/28/2018
Aluminum and glass skylight
Roof

3070004e 8/28/2018
Exterior illumination needed above door exit
Penthouse one roof entrance

3070005a 8/28/2018
Ballasted roof and aluminum and glass skylight
Roof

3070005e 8/28/2018
Free-wheeled turbine ventilator for building addition cooling
Roof

3070006a 8/28/2018
Sprayed roof coating and standing seam metal
Roof

3070006e 8/28/2018
Typical residential, electric domestic water heater
Second floor, custodial J2-1

3070007a 8/28/2018
Aged sprayed roof coating
Roof

3070007e 8/28/2018
Elevator #2 cab that has not been modernized
Elevator #2

3070008a 8/28/2018
Aged sprayed roof coating
Roof

3070008e 8/28/2018
Two-floor, nonpassenger, 100 pound capacity dumbwaiter
Second floor, south wing

3070009a 8/28/2018
EIFS on penthouse
Roof

3070009e 8/28/2018
Gas-fired domestic hot water boiler and storage tank
Second floor, boiler room

3070010a 8/28/2018
Concrete floor, painted walls, and lay-in acoustical tile
Room 225

3070010e 8/28/2018
Two original and one updated, gas-fired heating hot water boilers
Second floor, boiler room

3070011a 8/28/2018
Ceramic tile finishes and wall-mounted lavatories
Restroom T2-2

3070011e 8/28/2018
Main heating hot water pumps
Second floor, boiler room

3070012a 8/28/2018
Ceramic tile finishes and wall-mounted urinals
Restroom T2-2

3070012e 8/28/2018
One of two small domestic water backflow preventer valves
Second floor, boiler room

3070013a 8/28/2018
Ceramic tile finishes and wall-mounted water closet
Restroom T2-2

3070013e 8/28/2018
Updated inline centrifugal fans for fume hoods
Penthouse two

3070014a 8/28/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 231

3070014e 8/28/2018
Original and updated VFD for HVAC equipment
Penthouse two

3070015a 8/28/2018
Ceramic tile finishes and wall-mounted lavatories
Restroom T2-3

3070015e 8/28/2018
Motor control center for fume exhaust fans
Penthouse two

3070016a 8/28/2018
Ceramic tile finishes and wall-mounted water closet
Restroom T2-3

3070016e 8/28/2018
Original inline centrifugal fans for fume hoods
Penthouse two

3070017a 8/28/2018
Noncompliant railings
Stair S2-4

3070017e 8/28/2018
Plate-frame heat exchangers for an alternate low loading means of cooling and heating
Penthouse two

3070018a 8/28/2018
Ceramic tile floor, wood paneling, and painted surfaces
Corridor C2-7

3070018e 8/28/2018
One of two recently installed air-cooled chillers
Roof

3070019a 8/28/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 227

3070019e 8/28/2018
Typical fume hood updated in 2004
Second floor, room 225

3070020a 8/28/2018
Concrete floor, painted walls, and lay-in acoustical tile
Room 227A

3070020e 8/28/2018
Typical emergency shower/eyewash combination station
Second floor, room 225

3070021a 8/28/2018
Exterior concrete and metal walk
Courtyard

3070021e 8/28/2018
Typical emergency eyewash station
Second floor, room 223

3070022a 8/28/2018
Sheet vinyl, painted walls, and casework with kitchen sink
Room 202T

3070022e 8/28/2018
Typical lab-grade plastic drain piping
Second floor, room 221

3070023a 8/28/2018
Noncompliant service counter
Room 202

3070023e 8/28/2018
Fire alarm control system
First floor, room IDF-1

3070024a 8/28/2018
Terrazzo floor and painted surfaces
Corridor C2-2

3070024e 8/28/2018
Multiple small heating hot water distribution pumps
Second floor, M2-2

3070025a 8/28/2018

Nonaccessible drinking fountain

Corridor C2-2

3070025e 8/28/2018

Honeywell DDC system components

Second floor, M2-2

3070026a 8/28/2018

Carpeted floor and painted surfaces

Room 215

3070026e 8/28/2018

Cast-iron drain piping

Second floor, M2-2

3070027a 8/28/2018

Concrete floor, painted walls, laboratory casework, and lay-in acoustical tile

Room 132

3070027e 8/28/2018

Lay-in T8 open cell light fixture

Throughout

3070028a 8/28/2018
Vinyl sheet floor and painted surfaces
Room 138A

3070028e 8/28/2018
One of two variable-volume, four-pipe AHUs installed in 2004
Second floor, M2-2

3070029a 8/28/2018
Concrete floors, painted walls, laboratory casework, and lay-in acoustical tile
Room 122

3070029e 8/28/2018
Vacuum pump for lab use
Second floor, M2-2

3070030a 8/28/2018
Terrazzo floor and painted surfaces
Corridor C1-5

3070030e 8/28/2018
Typical ductless DX evaporator unit
Second floor, IDF-2

3070031a 8/28/2018

Carpeted floor, painted walls, and lay-in metal tile

Room 115

3070031e 8/28/2018

Typical secondary electrical equipment for building addition

First floor, room E2-1

3070032a 8/28/2018

Brick, EIFS, and glazing

North elevation

3070032e 8/28/2018

Typical automated upper level window for building cooling in evening hours

Second floor, addition

3070033a 8/28/2018

Brick and glazing

Northwest corner

3070033e 8/28/2018

One of two heating recover units with chilled water coils

First floor, room M1-1

3070034a 8/28/2018

Exterior catwalk

West elevation

3070034e 8/28/2018

Original fire suppression backflow preventer casing with updated internal components

First floor, room J1-3

3070035a 8/28/2018

Brick and glazing

Southwest corner

3070035e 8/28/2018

Typical surface-mounted T8 light fixtures

Corridors

3070036a 8/28/2018

Brick and glazing

Southeast corner

3070036e 8/28/2018

Hydraulic controller and reservoir for hydraulic elevator

First floor, room M1-5

3070037a 8/28/2018

Exterior finishes

East elevation

3070037e 8/28/2018

Main electrical switchgear

First floor, room E1-1

3070038e 8/28/2018

One of three, suspended, two-pipe cooling FCUs

First floor, room E1-1

3070039e 8/28/2018

Ceiling-mounted, original HID fixtures

Building connector path

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	5700
Asset Name	Swan Island
Year Built or Last Energy Renovation	1993

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

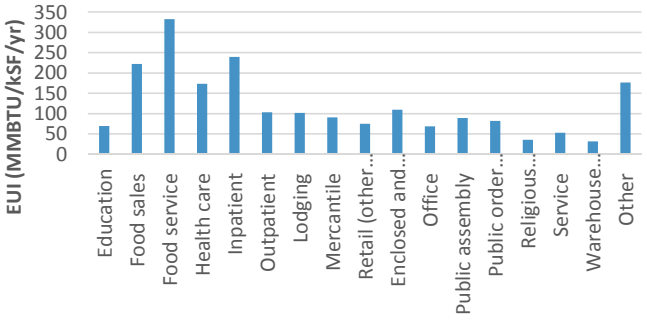
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

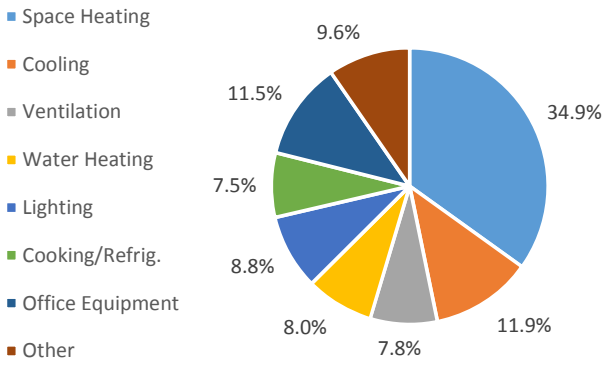


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP

PORTLAND COMMUNITY COLLEGE

Centers

Facility Condition Assessment

Willow Creek
Asset 5600

Inspected August 30, 2018

ISES CORPORATION

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FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

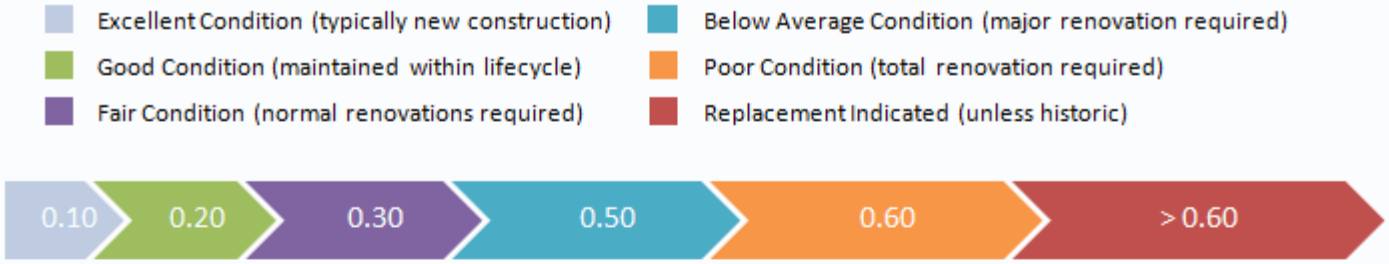
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

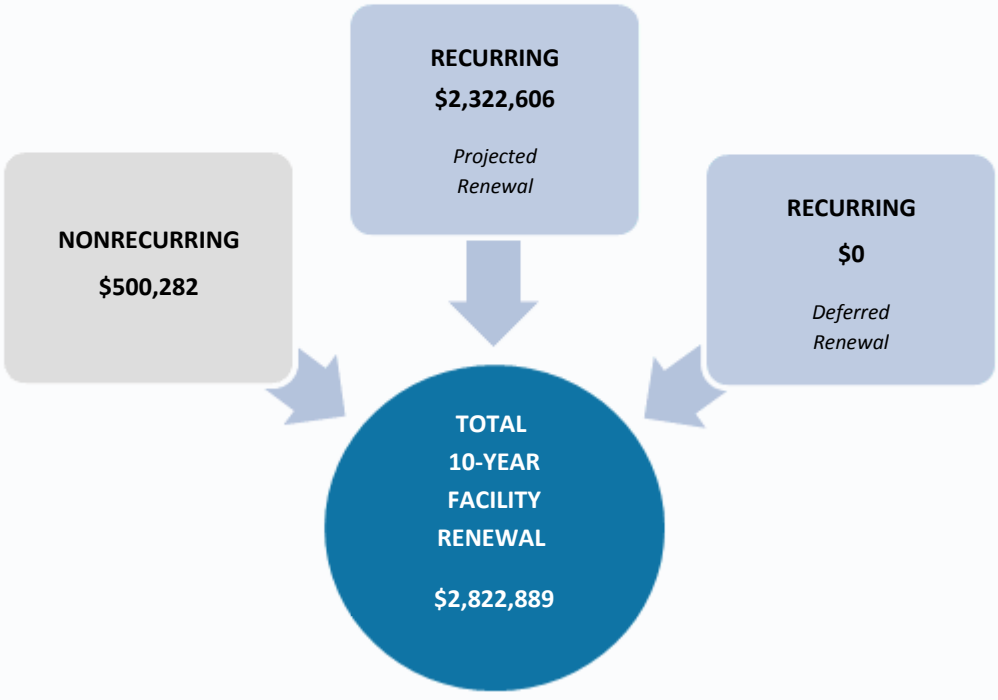
ASSET CODE	5600		
ASSET NAME	WILLOW CREEK	**CURRENT REPLACEMENT VALUE**	$37,262,000
ASSET USE	Classroom / Academic	**FACILITY CONDITION NEEDS INDEX**	0.08
YEAR BUILT	2010	**FACILITY CONDITION INDEX**	0.00
GSF	95,308	**10-YEAR $/SF**	29.62
INSPECTION DATE	08/30/2018		

FCNI Scale

The FCNI for this asset is **0.08**



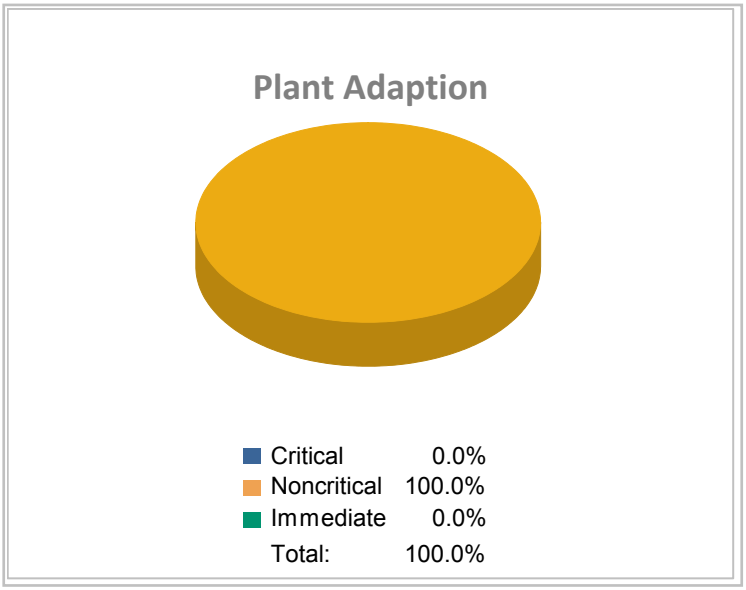
Total Facility Renewal Costs



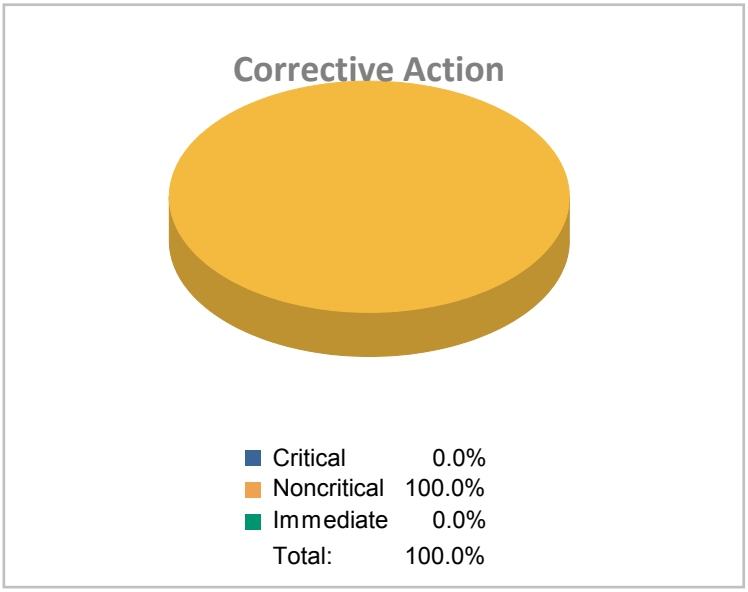
Nonrecurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$1,272**

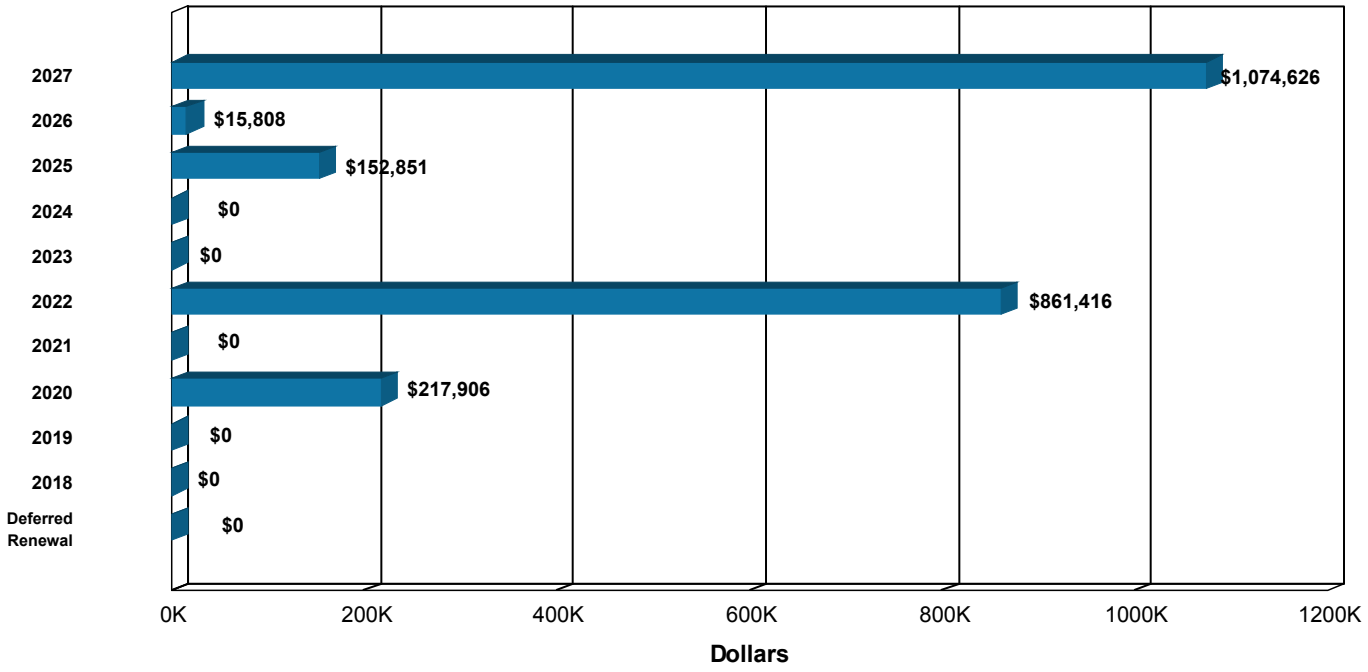


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Noncritical	**$499,010**

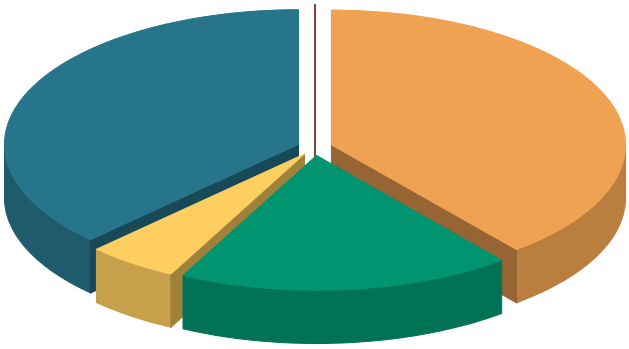


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$1,272	0%
Electrical	$1,106,317	39%
Exterior	$517,986	18%
Fire/Life Safety	$0	0%
Health	$0	0%
HVAC	$137,590	5%
Interiors	$1,058,733	38%
Plumbing	$990	0%
Site	$0	0%
Vert. Trans.	$0	0%
TOTAL	**$2,822,889**	

ASSET SUMMARY

Constructed in 2010, the Willow Creek facility is part of the Portland Community College system. This 95,308 square foot building is divided between three above ground levels. The flat, modified-bitumen roof features two mechanical penthouses along with several rows of solar panels. The majority of the interior spaces on each floor is dedicated to classrooms with the remaining square footage consisting of several open-air offices and associated support spaces. The exterior facade is a combination of metal and clay tiles, with extensive glazing on each elevation.

Information for this report was gathered during an on-site visit conducted on August 30, 2018.

Site

Situated in an urban area, the building has planters containing shrubs, ornamental trees, and ground cover immediately adjacent to the structure on each elevation. Beyond these planters are hard surface drives and parking with the Willow Creek Transit Station located to the south. No site work appears to be needed at this time.

Exterior Structure

The roof is mainly a flat, modified bituminous system with each of the penthouses and the raised section of roof covered in standing seam metal. Both of these roofing systems are in good condition with no recommendations in the next ten years. The exterior doors and the overhead coiling dock door are structurally sound and appear to be well maintained. The dual-pane, aluminum-framed windows, storefront, and curtain wall meet energy efficiency requirements. Except for replacement of the exterior door hardware, these exterior systems and related elements appear to be maintainable for the purview of this report.

The clay and metal exterior surfaces are in excellent condition and yearly maintenance should suffice to maintain these finishes for the scope of this report. However, university personnel stated that these tiles are held in place by friction and gravity only. Several tiles have blown off during high wind. For safety reasons each tile needs to be removed and securely reattached to the underlaying metal framing.

Interior Finishes/Systems

Flooring throughout the building consists of carpet, sheet vinyl, ceramic tile, rubber matting, and sealed concrete. The carpet and vinyl sheet are in satisfactory condition. However, the lifecycle of both applications is dependent upon building conditions and usage. The high-visibility, high-traffic nature of this facility tends to reduce the average lifecycle. To maintain an acceptable interior appearance, replace timeworn, stained, or damaged flooring with new commercial-grade finishes in the next six to ten years. The ceramic tile in the restrooms and the rubber exercise flooring in room 201 is in excellent condition

with no recommended upgrades in the next ten years. The sealed concrete flooring on all three floors is currently in good condition. However, due to high traffic and usage it will need to be refinished during the purview of this report.

The interior walls are mainly painted and appear to be in good condition. However, wall maintenance is a cyclical activity and they should be repainted within the next ten years. Durable applications that are appropriate for the usage is recommended. The remaining wall finishes are either ceramic in the restrooms or Fiberglass Reinforced Plastic (FRP) in select classrooms. These finishes are in satisfactory condition with no recommended upgrades at this time. The common ceiling applications throughout the building are acoustical tile and painted finishes. Suspended metal panels can be found in the corridors. All three finishes are in excellent condition and should outlast the ten-year scope of this report with only minimum required maintenance or concern.

The casework and related countertops are generally in good condition showing signs of normal use. The interior doors are typical wood with metal frames and fire rated according to the code requirements for these systems. Panic hardware is installed at all principle interior egress points and the stairs protective assemblies. The western stair towers are protected by overhead coiling fire doors with enclosed pedestrian doors. All of the interior door systems and casework are typically suitable for ten or more additional years of service assuming normal maintenance is performed.

Accessibility

Due to its recent construction, this facility has several accessible features including at-grade entry points and main entrances equipped with power assist doors. The interior spaces are designed to allow wheelchair access to all public spaces. A compliant elevator provides access to all three floors where one can find accessible restrooms, dual-level drinking fountains, lever door hardware, Braille signage, and compliant stairwell handrails and in-fill guards. However, the service counter in room 320 is not ADA compliant and a wheelchair-accessible section should be incorporated into this service counter.

Health

No health-related issues were observed or reported at the time of the inspection. Therefore, no Health category recommendations or assessment comments are included in this report.

Fire/Life Safety

The building appears to have adequate egress pathways in regard to fire rating and exit signage designation, and no exiting obstructions were noted or reported. Select interior light fixtures connected to the emergency power grid illuminate the path of egress. No major issues were reported or anticipated with the exit signs or emergency lighting.

The Silent Knight addressable fire alarm control panel is in room 101E. The devices that serve this system include manual pull stations, audible/visible alarms, and smoke detectors. This system appears

to be adequate, in working condition, and serviced regularly. No modernization is anticipated over the next ten years.

This facility is also fully protected by an automated wet-pipe fire suppression system with glass bulb type sprinkler heads. This relatively long-lived system appears to be in adequate condition and is anticipated to provide reliable service beyond the scope of this report, given normal testing, inspection, and maintenance is completed as required per NFPA 25.

HVAC

The primary sources of heating, cooling, and ventilation are a blend of air handling units (AHUs), DX split systems, VAV reheat boxes, ductwork, and a direct digital control (DDC) system that is presumably of adequate capacity and performance. The terminal assembly components of the DDC should provide approximately 20 years of service. However, DDC components such as the software, field panels, and instrumentation have a significantly shorter life expectancy to account for technological upgrades and obsolescence concerns. Updating these specific parts of the DDC should enhance facility maintenance and energy efficiency as well as take advantage of modern technologies such as Internet of Things (IoT) and advanced network security features. Newer systems also provide control strategies, such as occupancy schedule, economizer control, and zone temperature set-points where not already employed.

A single, 275-ton air-cooled chiller provides chilled water. Two gas-fired boilers generate heating hot water for building heat. Several media pumps distribute the thermal media to the AHUs and overhead mounted VAV reheat units. The bulk of facility conditioned tempered air is provided by two, variable volume, single-zone, four-pipe AHUs on the roof. The units appear to be in good working order and adequately sized. Ductless DX and split system DX units address more space-specific HVAC needs. An adjustment was made to the HVAC distribution line item to account for the innovative window automation system that allows outside cool air to directly enter the building during evening hours. This reduces equipment operational needs and lowers overall building electrical costs. No modernization efforts are anticipated over the reporting period.

Electrical

The local power authority provides electrical power to a 277/480 volt switchboard in the main electrical room. The Square D switchgear has a rated capacity of 2,500 amps and supplies power throughout the facility. The secondary electrical distribution network supplies both 277/480 and 120/208 volt power. Square D panelboards receive the power for distribution through step-down transformers where 120/208 volt power is required. Circuits are then energized for mechanical, lighting, and general purpose loads. The electrical distribution network is currently in good condition and should outlast the scope of this report.

The majority of interior lighting consists of recessed CFL fixtures and both T8 and T5 lay-in fixtures. Building-mounted T8 strip lighting and recessed non-LED light fixtures illuminate exterior entrances and stairs. Although the inspection was performed during daylight, the current lighting scheme seems to

address the majority of sensible lighting opportunities. Based on typical lifecycle expectations, obsolescence, and the wide availability of LED lighting technology, replacement of all non-LED lighting is recommended. Upgrading to LED lighting will lower operational and maintenance expenditures, increase traditional lifecycle expectations for lighting systems, and provide an easily acceptable return on investment (ROI). As part of any lighting modernization effort, ensure applicable building energy codes and standards are incorporated.

Variable frequency drives (VFDs) control motor speeds and torque by varying the motor input frequency and voltage to conserve energy. The drives in this building serve AHUs, media pumps, and an elevator fan. Installed between 2010 and 2017, at least half of the drives will reach the end of their statistical life within the reporting window. Replacement is recommended to avoid potential parts obsolescence and operational concerns that result from an undesired failure. This planned approach will likely provide additional energy savings, promote equipment lifecycles, and deliver advanced technological capabilities afforded by devices that are more modern.

Emergency electrical service is provided by a 50 kW diesel-fired generator. Power is then fed through two, 100-amp automatic transfer switches and related emergency panelboards. The switches provide power to egress illumination fixtures and select mechanical equipment during a loss of power. Reliable service is expected to continue over the reporting purview.

Plumbing

Potable water is distributed by insulated rigid copper piping. Where observable, sanitary waste, vent, and stormwater piping is cast-iron and plastic. Both the supply and drain piping networks should continue to provide adequate service beyond the reporting purview. A gas-fired, commercial water heater, adjacent storage tank, and short-lived instantaneous electric water heater provide domestic hot water. Multiple backflow preventers (BFP), a duplex domestic water boast pump station, water purification system, and water reclamation system were also noted. Other than the instantaneous water heater, the systems and related components appear to be in good working order and should provide adequate service over the next ten years. A utility air compressor in the penthouse was installed in 2018 and appears to be adequately sized and in good working order.

The plumbing fixtures consist of dual-level drinking fountains, tankless water closets, urinals, lavatories, showers, and kitchen and janitorial sinks. The plumbing fixtures will continue to serve the building well beyond the ten-year scope of this report.

Vertical Transportation

An Otis hydraulic passenger elevator serves the facility. The unit has a 5,000-pound capacity, transits three floors, and is equipped with an AUT-O-SAFE emergency return unit. While detailed elevator testing and inspection is not included in this assessment effort, the systems observed were in working condition and operating properly on the day of inspection. No modernization is anticipated over the next ten years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

August 30, 2018

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Bernard Cernosek	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Anthony Staffieri	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Tony Ichsan, ARM, CEFP, LEED AP	Director, Facilities Management Services

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Asset Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the college a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Portland using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	103.0
Local Materials Index	99.4
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilized to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Component Renewal Cost by Year report, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Asset Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Asset Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Asset Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration
  b. improvements to facilities associated with critical accessibility needs
  c. potential safety hazards

- Noncritical

  Projects in this category include:

  a. improvements to facilities associated with noncritical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL COSTS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTAL
ACCESSIBILITY	0	0	1,272	0	0	0	0	0	0	0	0	0	0	0	$1,272
EXTERIOR	0	0	499,010	0	0	0	0	0	18,976	0	0	0	0	0	$517,986
INTERIOR	0	0	0	0	0	0	79,326	0	842,439	0	0	136,968	0	0	$1,058,733
PLUMBING	0	0	0	0	0	0	990	0	0	0	0	0	0	0	$990
HVAC	0	0	0	0	0	0	137,590	0	0	0	0	0	0	0	$137,590
FIRE/LIFE SAFETY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
ELECTRICAL	0	0	0	0	0	0	0	0	0	0	0	15,883	15,808	1,074,626	$1,106,317
SITE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
VERT. TRANS.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$0	$500,282	$0	$0	$0	$217,906	$0	$861,416	$0	$0	$152,851	$15,808	$1,074,626	$2,822,889
TOTAL NONRECURRING PROJECT NEEDS			$500,282	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$2,322,606	

CURRENT REPLACEMENT VALUE	$37,262,000
FACILITY CONDITION NEEDS INDEX	0.08
FACILITY CONDITION INDEX	0.00

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
95,308	$2,822,889	$29.62

RENEWAL COSTS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$1,272	$0	$1,272
EXTERIOR	$499,010	$18,976	$517,986
INTERIOR	$0	$1,058,733	$1,058,733
PLUMBING	$0	$990	$990
HVAC	$0	$137,590	$137,590
FIRE/LIFE SAFETY	$0	$0	$0
ELECTRICAL	$0	$1,106,317	$1,106,317
SITE	$0	$0	$0
VERT. TRANS	$0	$0	$0
HEALTH	$0	$0	$0
TOTALS	**$500,282**	**$2,322,606**	**$2,822,889**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
5600ES01	EXTERIOR WALL TILE REPAIR	B2010	3	Corrective Action	499,010
5600AC01	SERVICE COUNTER ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	1,272
				TOTAL	**$500,282**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5600	IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			CORRIDORS	C3020	2020	79,326
5600	WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT	3108	101E	D2020	2020	990
5600	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	THROUGHOUT			D3060	2020	89,849
5600	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	THROUGHOUT			D3060	2020	47,741
5600	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DRS			B2030	2022	1,893
5600	DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL DRS			B2030	2022	2,839
5600	DR36	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL DRS			B2030	2022	2,374
5600	DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			B2030	2022	11,870
5600	IW01	WALL FINISH - APPLIED, STANDARD				C3010	2022	340,531
5600	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			OFFICES, CLSSRMS	C3020	2022	501,909
5600	IF04	FLOORING - VINYL SHEET, STANDARD			CLSSRMS, BRKRMS	C3020	2025	136,968
5600	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-1	2596	401	D5010	2025	3,633
5600	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-2	2597	401	D5010	2025	3,633
5600	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-3	2595	401	D5010	2025	5,554
5600	LE01	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED NON-HID		PERI	D5020	2025	3,064
5600	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTU1 RF	2616	ROOF	D5010	2026	7,904

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
5600	VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTU2 RF	2617	ROOF	D5010	2026	7,904
5600	LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	T8 STRIPS		ENTRANCES	D5020	2027	2,034
5600	LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			FLAG POLE	D5020	2027	2,315
5600	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	THROUGHOUT			D5020	2027	1,070,277
							TOTAL	**$2,322,606**

PROJECT LIST BY CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
2	5600ES01	EXTERIOR WALL TILE REPAIR	3	$499,010
		TOTAL FOR CORRECTIVE ACTION		**$499,010**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	5600AC01	SERVICE COUNTER ACCESSIBILITY UPGRADES	3	$1,272
		TOTAL FOR PLANT ADAPTION		**$1,272**
		GRAND TOTAL:		**$500,282**

PROJECT LIST BY CATEGORY CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	5600AC01	3	Plant Adaption	SERVICE COUNTER ACCESSIBILITY UPGRADES	$1,272
				TOTAL FOR ACCESSIBILITY	**$1,272**
2	5600ES01	3	Corrective Action	EXTERIOR WALL TILE REPAIR	$499,010
				TOTAL FOR EXTERIOR	**$499,010**
				GRAND TOTAL:	**$500,282**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

SERVICE COUNTER ACCESSIBILITY UPGRADES

Project Number:	5600AC01	**Category Code:** AC4A	
Priority Sequence:	1		
Priority Class:	Noncritical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	9/20/2018	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	804	Not Applicable	Item Only: Floor(s) 3

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the service counter in room 320 is a barrier to accessibility. A wheelchair-accessible section should be incorporated into this noncompliant service counter.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant service counter	LF	3	$199	$597	$106	$318	$915
Base Material/Labor Costs				**$597**		**$318**	
Indexed Material/Labor Costs				**$593**		**$321**	**$914**
Construction Mark Up at 20.0%							**$183**
Original Construction Cost							**$1,097**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$1,097**
Professional Fees at 16.0%							**$176**
TOTAL PROJECT COST							**$1,272**

All costs shown as Present Value

EXTERIOR WALL TILE REPAIR

Project Number:	5600ES01	**Category Code:** ES2B	
Priority Sequence:	2		
Priority Class:	Noncritical	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	9/20/2018	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The exterior clay tiles are held in place by friction and gravity. Several tiles have blown off during high winds. Each tile needs to be removed and securely reattached to the underlaying metal framing.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace ceramic or stone wall tile (frost proofing, thin-set)	SF	10,130	$15.30	$154,989	$20.02	$202,803	$357,792
Base Material/Labor Costs				**$154,989**		**$202,803**	
Indexed Material/Labor Costs				**$154,059**		**$204,425**	**$358,484**
Construction Mark Up at 20.0%							**$71,697**
Original Construction Cost							**$430,181**
Date of Original Estimate: 9/20/2018						**Inflation**	**$0**
Current Year Construction Cost							**$430,181**
Professional Fees at 16.0%							**$68,829**
TOTAL PROJECT COST							**$499,010**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION				15,200	SF	$359,221	2010	25		2035
EW13	WALL, EXTERIOR, TILE OR GLASS BLOCK CLEAN, GROUT, AND REPAIR	RED CLAY			10,130	SF	$41,311	2010	15	15	2040
WN03	GLASS, CURTAIN WALL, STANDARD				2,490	SF	$471,960	2010	60		2070
WN05	GLASS, STOREFRONT				2,490	SF	$351,552	2010	40		2050
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD				7,480	SF	$1,353,562	2010	40		2050
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PANIC HDW			10	LEAF	$30,222	2010	25		2035
DR05	DOOR AND FRAME, EXTERIOR, SWINGING, ALUMINUM AND GLASS	PUSH HDW			2	LEAF	$6,044	2010	25		2035
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	PANIC HDW			2	LEAF	$4,013	2010	40		2050
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	CMMRCL HDW			3	LEAF	$6,020	2010	40		2050
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	FROSTED	3103		90	SF	$12,190	2010	30		2040
DR28	DOOR OPERATOR, POWER-ASSIST	INTERIOR DRS			10	EA	$67,703	2010	20		2030
DR28	DOOR OPERATOR, POWER-ASSIST	GLASS DRS			3	EA	$20,311	2010	20		2030
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	FROSTED	3103		1	EA	$2,095	2010	30		2040
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DRS			2	EA	$1,893	2010	12		2022
DR34	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL DRS			3	EA	$2,839	2010	12		2022
DR36	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS			10	EA	$11,870	2010	12		2022

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR36	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL DRS			2	EA	$2,374	2010	12		2022
RR06	ROOF - BITUMINOUS, 3-PLY, SBS MODIFIED BITUMEN, MOP	MOD BIT			22,875	SF	$598,431	2010	20		2030
RR10	ROOF - PANEL, ALUMINUM OR GALVANIZED, STANDING SEAM	METAL			7,625	SF	$130,285	2010	40		2050
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	CMMRCL HDW			45	LEAF	$99,515	2010	60		2070
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDW			15	LEAF	$55,028	2010	60		2070
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CMMRCL HDW			87	LEAF	$319,163	2010	60		2070
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	FIRE DOOR	3286		1	LEAF	$3,669	2010	60		2070
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	FIRE DOOR	3150		1	LEAF	$3,669	2010	60		2070
DR03	DOOR - OVERHEAD, INTERIOR		3269		264	SF	$27,506	2010	45		2055
DR03	DOOR - OVERHEAD, INTERIOR		3149		264	SF	$27,506	2010	45		2055
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	STD DRS			45	EA	$33,880	2010	35		2045
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	INTERIOR DRS			87	EA	$65,502	2010	35		2045
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	FIRE DOOR			1	EA	$2,635	2010	35		2045
DR24	DOOR LOCK, COMMERCIAL-GRADE, INTERIOR	FIRE DOOR			1	EA	$2,635	2010	35		2045
DR26	DOOR PANIC HARDWARE, INTERIOR	INTERIOR DRS			15	EA	$17,804	2010	30		2040
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD				380	LF	$213,135	2010	30		2040

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IW01	WALL FINISH - APPLIED, STANDARD				122,010	SF	$340,531	2010	12		2022
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD			RESTROOMS	3,850	SF	$155,931	2010	60		2070
IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION				2,570	SF	$29,802	2010	20		2030
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD			OFFICES, CLSSRMS	42,130	SF	$501,909	2010	12		2022
IF04	FLOORING - VINYL SHEET, STANDARD			CLSSRMS, BRKRMS	12,150	SF	$136,968	2010	15		2025
IF06	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD			RESTROOMS	3,240	SF	$114,264	2010	40		2050
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL			CORRIDORS	22,680	SF	$79,326	2010	10		2020
IF17	FLOORING - ATHLETIC, RUBBER, TILE OR ROLL			201	410	SF	$12,446	2010	20		2030
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD				60,760	SF	$676,270	2010	45		2055
IC04	CEILING FINISH - APPLIED PAINT OR STAIN, STANDARD				16,200	SF	$45,214	2010	24		2034
IC06	CEILING FINISH - METAL OR SPECIALTY TILE			1ST FL	4,050	SF	$204,372	2010	70		2080
VT03	ELEVATOR MODERNIZATION - HYDRAULIC 2-5 FLOORS	ELEV1	4385	1.1	1	EA	$386,975	2010	25		2035
DF01	DRINKING FOUNTAIN, DUAL-LEVEL				6	EA	$16,164	2010	25		2035
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG				14	EA	$18,916	2010	35		2045
FX04	PLUMBING FIXTURE - SINK, KITCHEN				18	EA	$13,906	2010	20		2030
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY				6	EA	$9,986	2010	50		2060

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD				4	EA	$4,551	2010	35		2045
FX10	PLUMBING FIXTURE - URINAL				8	EA	$8,629	2010	35		2045
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS				22	EA	$37,289	2010	35		2045
BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP	2602	401	1	EA	$1,006	2010	20		2030
BF01	BACKFLOW PREVENTER (<=1 INCH)	DW BFP1	2601	401	1	EA	$1,006	2010	20		2030
BF02	BACKFLOW PREVENTER (1-2 INCHES)	MAIN DW BFP1	3109	106B	1	EA	$2,235	2010	20		2030
BF03	BACKFLOW PREVENTER (2-3 INCHES)	MAIN DW BFP	3102	106	1	EA	$7,331	2010	20		2030
PP01	DOMESTIC WATER BOOSTER SYSTEM	RWRS-1	3110 - 3112	106	10	HP	$126,809	2010	20		2030
PS02	SUPPLY PIPING SYSTEM - CLASSROOM	THROUGHOUT			95,308	SF	$1,091,362	2010	50		2060
TK19	EXPANSION TANK, DIAPHRAGM (250-550 GAL)	HW-ST-1	2587	401	300	GAL	$9,412	2010	25		2035
WH02	WATER HEATER - COMMERCIAL, GAS (<87-168 MBH INPUT)	GWH1	2586	401	150	MBH	$14,001	2010	25		2035
WH32	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT	3108	101E	1	EA	$990	2010	10		2020
WT06	REVERSE OSMOSIS SYSTEM (5,000-10,000 GPD)	RWHHT-1	3109, 3013 - 3115	106B	5,760	GPD	$24,776	2010	20		2030
PD02	DRAIN PIPING SYSTEM - CLASSROOM	THROUGHOUT			95,308	SF	$1,637,421	2010	60		2070
PG15	AIR COMPRESSOR - UTILITY (< =5 HP)	UAC		401	5	HP	$11,412	2018	25		2043
BL27	BOILER - GAS (1500-2400 MBH)	B-1	2579	410	1,700	MBH	$63,822	2010	28		2038

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BL27	BOILER - GAS (1500-2400 MBH)	B-2	2580	410	1,700	MBH	$63,822	2010	28		2038
CH10	CHILLER - AIR COOLED PACKAGE (>150 TONS)	ACC-1	2606	ROOF	275	TON	$301,702	2010	30		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CNDR1	5920	ROOF	5	TON	$11,449	2012	25		2037
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CNDR2	5921	ROOF	5	TON	$11,449	2012	25		2037
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	EVAP1		1ST FLR, OVHD	5	TON	$7,482	2010	30		2040
HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	EVAP2		1ST FLR, OVHD	5	TON	$7,482	2010	30		2040
HU17	DUCTLESS DX SPLIT SYSTEM (<=1 TON)	ACCU-5, ACU-5	2612 / 6787	ROOF, ELEC RM 3.1	1	TON	$2,953	2010	25		2035
HU17	DUCTLESS DX SPLIT SYSTEM (<=1 TON)	ACCU-3, ACU-3	2610 / 6788	ROOF, ELEC RM E2-1	1	TON	$2,953	2010	25		2035
HU17	DUCTLESS DX SPLIT SYSTEM (<=1 TON)	ACCU-4, ACU-4	2609 / 5924	ROOF, DATA RM 2.1	1	TON	$2,953	2010	25		2035
HU17	DUCTLESS DX SPLIT SYSTEM (<=1 TON)	ACCU-6, ACU-6	2607 / 5922	ROOF, TELE RM 3.1	1	TON	$2,363	2010	25		2035
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	ACCU-1, ACU-1	2611 / 6783	ROOF, RM 1.1	2	TON	$5,031	2010	25		2035
HU18	DUCTLESS DX SPLIT SYSTEM (1-2 TON)	ACCU-2, ACU-2	2608 / 5956	ROOF, RM MDF1-1	2	TON	$5,031	2010	25		2035
HU19	DUCTLESS DX SPLIT SYSTEM (>2 TON)	ACU-7	2613 / 9206	ELEV CNTL 1.1	3	TON	$4,457	2010	25		2035
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU1	2622 / 21	ROOF	60	HP	$914,314	2010	25		2035
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU2	2624 / 20	ROOF	60	HP	$914,314	2010	25		2035
FN18	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EF1	5991	ROOF	1	EA	$3,773	2018	25		2043

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RTU1 RF	2623	ROOF	20	HP	$26,417	2010	35		2045
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	RTU2 RF	2625	ROOF	20	HP	$26,417	2010	35		2045
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	THROUGHOUT			95,308	SF	$3,729,556	2010	45		2055
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP1	2583	401	8	HP	$10,833	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP2	2582	401	10	HP	$16,926	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	CHWP3	2581	401	10	HP	$16,926	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	HWP1	2585	401	5	HP	$8,463	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	HWP2	2584	401	5	HP	$8,463	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	HWP3	2627	ROOF AHUS	1	HP	$677	2010	30		2040
PH01	PUMP - ELECTRIC (<=10 HP)	HWP4	2626	ROOF AHUS	1	HP	$677	2010	30		2040
TK28	EXPANSION TANK, DIAPHRAGM (<25 GAL)	ET-1	2590	401	22	GAL	$6,357	2010	15	3	2028
TK30	EXPANSION TANK, DIAPHRAGM (45-69 GAL)	ET-2	2589	401	68	GAL	$9,945	2010	20		2030
TK33	EXPANSION TANK, DIAPHRAGM (250-550 GAL)	CWBT1	2599	401	300	GAL	$9,412	2010	25		2035
TK33	EXPANSION TANK, DIAPHRAGM (250-550 GAL)	CWBT2	2600	401	300	GAL	$9,412	2010	25		2035
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM	THROUGHOUT			95,308	SF	$322,882	2010	20		2030
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	THROUGHOUT			95,308	SF	$89,849	2010	10		2020

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	THROUGHOUT			95,308	SF	$47,741	2010	10		2020
FS01	FIRE SPRINKLER SYSTEM - WET	THROUGHOUT			95,308	SF	$1,289,388	2010	80		2090
FA01	FIRE ALARM SYSTEM - DEVICES	THROUGHOUT		101E	95,308	SF	$409,637	2010	18		2028
FA04	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER UP TO 400 POINTS			101E	1	EA	$24,131	2010	18		2028
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	THROUGHOUT			95,308	SF	$2,366,792	2010	50		2060
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	E41A	2630	1.1	150	AMP	$12,507	2010	40		2050
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	E21A	2629	1.1	150	AMP	$12,507	2010	40		2050
SG06	MAIN SWITCHBOARD W/BREAKERS (1600-2500 AMP)	MDP	2634	1.1	2,500	AMP	$210,514	2010	40		2050
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-1	2596	401	5	HP	$3,633	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-2	2597	401	5	HP	$3,633	2010	15		2025
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	ELEV FAN	5923	3.1	3	HP	$2,180	2017	15		2032
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-3	2595	401	10	HP	$5,554	2010	15		2025
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-2	5919	401	10	HP	$5,554	2016	15		2031
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-1		401	8	HP	$3,554	2017	15		2032
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTU1 RF	2616	ROOF	20	HP	$7,904	2010	16		2026
VF05	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTU2 RF	2617	ROOF	20	HP	$7,904	2010	16		2026

ASSET COMPONENT INVENTORY

COMPONENT DESCRIPTION		IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF10	VARIABLE FREQUENCY DRIVE (50-75 HP)	RTU1	2618	ROOF	60	HP	$15,624	2010	20		2030
VF10	VARIABLE FREQUENCY DRIVE (50-75 HP)	RTU2	2619	ROOF	60	HP	$15,624	2010	20		2030
LE01	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED NON-HID		PERI	15	EA	$3,064	2010	15		2025
LE02	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	T8 STRIPS		ENTRANCES	4	EA	$2,034	2010	20	-3	2027
LE03	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)			FLAG POLE	3	EA	$2,315	2010	20	-3	2027
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	THROUGHOUT			95,308	SF	$1,070,277	2010	20	-3	2027
GN02	GENERATOR - DIESEL (<30-100KW)		3107	106B	50	KW	$48,829	2010	25		2035
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS OP	3105	106B	100	AMP	$5,527	2010	25		2035
GN14	SWITCH - AUTO TRANSFER, 480 V (60-100 AMP)	ATS E	3104	106B	100	AMP	$5,527	2010	25		2035
						Grand Total:	$22,267,270				

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

No Projected Component Replacement Cost for Asset No. 5600 for DR

No Projected Component Replacement Cost for Asset No. 5600 for 2018

No Projected Component Replacement Cost for Asset No. 5600 for 2019

2020						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D2020	WATER HEATER (ELECTRIC INSTANTANEOUS)	INSTAHOT	1	EA	$1,050	2020
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		22,680	SF	$84,157	2020
D3060	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	THROUGHOUT	95,308	SF	$50,649	2020
D3060	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	THROUGHOUT	95,308	SF	$95,320	2020
	2020	PROJECTED COMPONENT REPLACEMENT COST			$231,176	

No Projected Component Replacement Cost for Asset No. 5600 for 2021

2022						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		42,130	SF	$564,903	2022
C3010	WALL FINISH - APPLIED, STANDARD		122,010	SF	$383,270	2022
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	GLASS DRS	2	EA	$2,130	2022
B2030	DOOR LOCK, COMMERCIAL-GRADE, EXTERIOR	HOLLOW METAL DRS	3	EA	$3,196	2022
B2030	DOOR PANIC HARDWARE, EXTERIOR	GLASS DRS	10	EA	$13,360	2022
B2030	DOOR PANIC HARDWARE, EXTERIOR	HOLLOW METAL DRS	2	EA	$2,672	2022
	2022	**PROJECTED COMPONENT REPLACEMENT COST**			**$969,531**	

No Projected Component Replacement Cost for Asset No. 5600 for 2023

No Projected Component Replacement Cost for Asset No. 5600 for 2024

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-1	5	HP	$4,468	2025
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	HWP-2	5	HP	$4,468	2025
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	CHWP-3	10	HP	$6,830	2025
D5020	RES EXTERIOR BLDG MT DECO OR FLOOD LIGHTING	RECESSED NON-HID	15	EA	$3,768	2025
C3020	FLOORING - VINYL SHEET, STANDARD		12,150	SF	$168,453	2025
	2025	**PROJECTED COMPONENT REPLACEMENT COST**			**$187,987**	

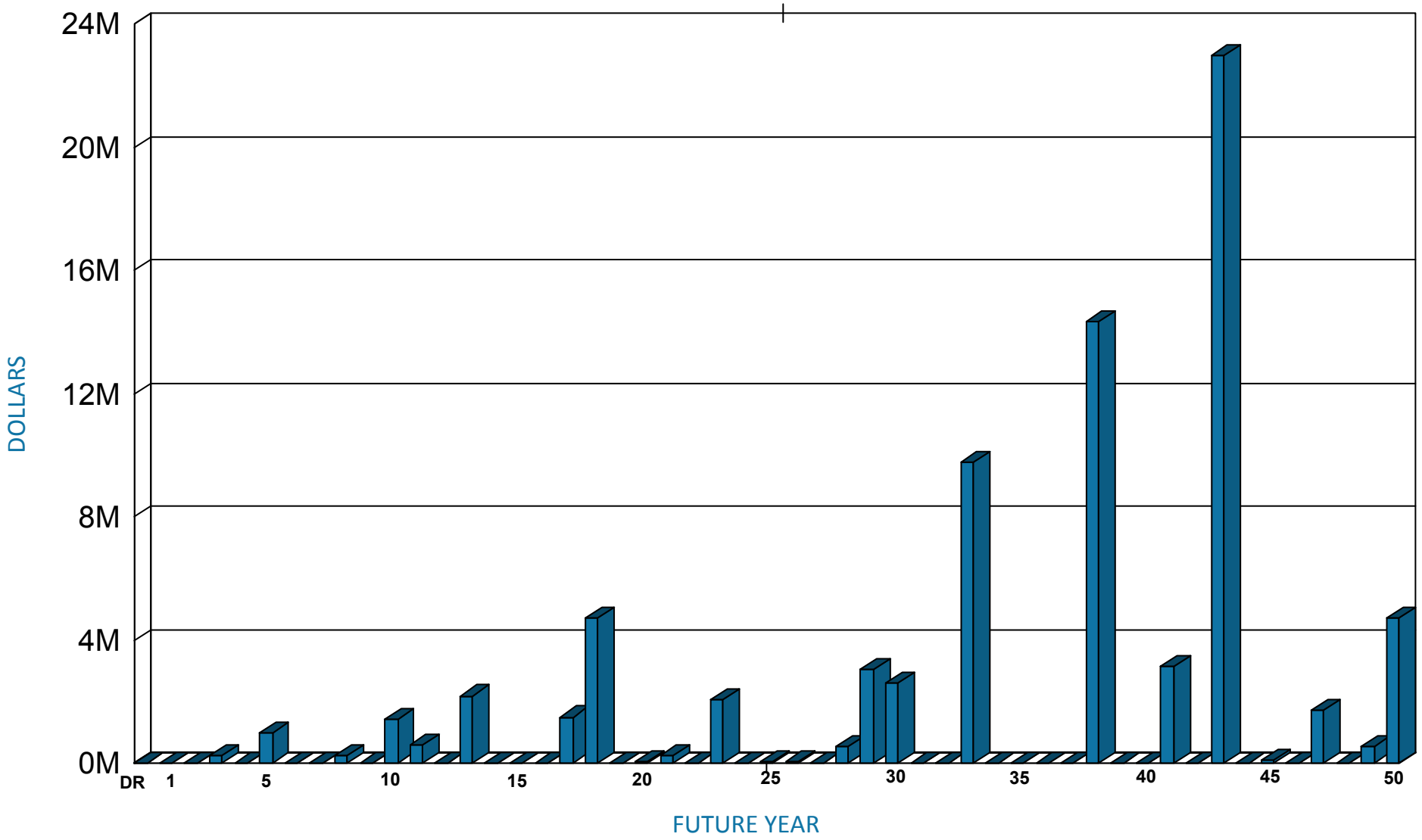
COMPONENT RENEWAL COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2026						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTU1 RF	20	HP	$10,012	2026
D5010	VARIABLE FREQUENCY DRIVE (15-20 HP)	RTU2 RF	20	HP	$10,012	2026
	2026	PROJECTED COMPONENT REPLACEMENT COST			$20,025	

2027						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	COM EXTERIOR BLDG MT DECO LIGHTING (COACH, SCONCE, PEND, SOFFIT)	T8 STRIPS	4	EA	$2,654	2027
D5020	COM EXTERIOR BLDG MT HI FLOOD LIGHTING (WALLPACK, WALLWASH)		3	EA	$3,020	2027
D5020	LIGHTING SYSTEM, INTERIOR - CLASSROOM	THROUGHOUT	95,308	SF	$1,396,469	2027
	2027	PROJECTED COMPONENT REPLACEMENT COST			$1,402,143	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



Average Annual Renewal Cost per SF $6.00

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS/PROJECT LOCATIONS

PORTLAND COMMUNITY COLLEGE

ES01

WILLOW CREEK

BLDG NO. 5600

ES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

FIRST FLOOR PLAN

Sheet No.
1 of 3

PORTLAND COMMUNITY COLLEGE

WILLOW CREEK

BLDG NO. 5600

CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

SECOND FLOOR PLAN

Sheet No.
2 of 3

PORTLAND COMMUNITY COLLEGE

WILLOW CREEK

BLDG NO. 5600

SES CORPORATION

FACILITY CONDITION ASSESSMENT

3100 Breckinridge Boulevard
Suite 400, Duluth, GA 30096
770.879.7825

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/7/2018
Drawn by: A.W.
Project No. 18-064

THIRD FLOOR PLAN

Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

5600001a 8/30/2018

Modified bitumen roofing

Roof

5600001e 8/30/2018

Centrifugal exhaust fan and typical ductless DX air-cooled condenser

Rooftop

5600002a 8/30/2018

Metal siding

Roof

5600002e 8/30/2018

Air-cooled, 275 ton chiller

Rooftop

5600003a 8/30/2018

Metal siding and hollow metal doors

Penthouse

5600003e 8/30/2018

Interior walk-in compartment of AHU1 and AHU2. Distribution piping, circulation pumps and VFDs are in this space.

Rooftop

5600004a 8/30/2018
Clay tile hung on metal support
Roof

5600004e 8/30/2018
Two gas-fired heating hot water boilers
Penthouse, room 401

5600005a 8/30/2018
Painted concrete floor and unfinished walls
Penthouse

5600005e 8/30/2018
Typical VFDs for media pumps
Penthouse, room 401

5600006a 8/30/2018
Concrete treads and compliant railings
Stair 3

5600006e 8/30/2018
HVAC system expansion tanks
Penthouse, room 401

5600007a 8/30/2018
Sealed concrete floor, painted walls, and unfinished ceiling
Room 320

5600007e 8/30/2018
Typical media pump orientation and installation
Penthouse, room 401

5600008a 8/30/2018
Nonaccessible service counter
Room 320

5600008e 8/30/2018
Commercial gas-fired domestic water heating unit
Penthouse, room 401

5600009a 8/30/2018
Sealed concrete floor and painted surfaces
Corridor C3-1

5600009e 8/30/2018
Typical overhead-mounted VAV reheat unit
Third floor, room 320

5600010a 8/30/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 307B

5600010e 8/30/2018
Typical secondary electrical distribution equipment
Third floor, room S3.7

5600011a 8/30/2018
Vinyl sheet flooring, painted walls, and casework with kitchen sink
Room 307D

5600011e 8/30/2018
T8 lay-in fluorescent light fixtures
Third floor, room S3.6

5600012a 8/30/2018
Vinyl sheet flooring, painted and laminate walls, and casework with kitchen sink
Room 305

5600012e 8/30/2018
Typical ductless DX evaporator unit
Third floor, data room 3.1

5600013a 8/30/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 310

5600013e 8/30/2018
One of multiple domestic water backflow preventer valves
First floor, room 106

5600014a 8/30/2018
Accessible drinking fountains
Corridor C3-1

5600014e 8/30/2018
Domestic water boast pump and water purification systems
First floor, room 106

5600015a 8/30/2018
Overhead fire door and typical wood door with metal frame
Corridor C3-1

5600015e 8/30/2018
Instantaneous electric water heating unit
First floor, room 101E

5600016a 8/30/2018

Accessible shower

Restroom T2-2

5600016e 8/30/2018

Main distribution switchgear

First floor, room 1.1

5600017a 8/30/2018

Ceramic tile floor and accessible water closet

Restroom T2-2

5600017e 8/30/2018

Recessed non-HID lighting

East elevation

5600018a 8/30/2018

Ceramic tile floor and wall-mounted urinals

Restroom T2-2

5600019a 8/30/2018

Ceramic tile floor and wall-mounted lavatories

Restroom T2-2

5600020a 8/30/2018
Rubber floor, painted walls, and lay-in acoustical tile
Room 201

5600021a 8/30/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 101

5600022a 8/30/2018
Vinyl sheet flooring, painted walls, casework with kitchen sink, and lay-in acoustical tile
Room 101J

5600023a 8/30/2018
Carpeted floor, painted walls, and lay-in acoustical tile
Room 103/104

5600024a 8/30/2018
Sealed concrete finishes
Room 102

5600025a 8/30/2018
Sealed concrete floor, painted walls, and metal ceiling
Corridor C1-1

5600026a 8/30/2018

Storefront and curtain wall glazing, clay tile, and metal walls

Southwest corner

5600027a 8/30/2018

Exterior glazing, clay tile, and metal panels

Southeast corner

5600028a 8/30/2018

Exterior glazing, clay tile, and metal panels

Northeast corner

5600029a 8/30/2018

Exterior glazing, clay tile, and metal panels

Northwest corner

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	Portland Community College
Asset Number	5600
Asset Name	Willow Creek
Year Built or Last Energy Renovation	2010

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

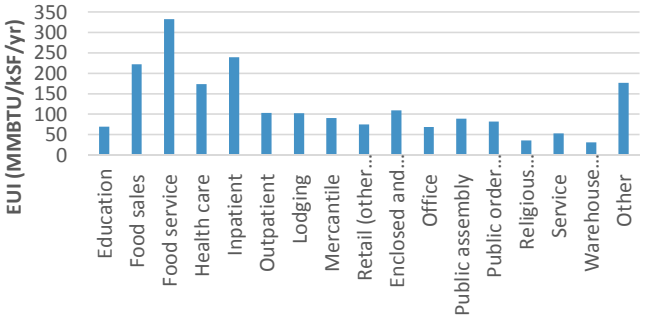
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

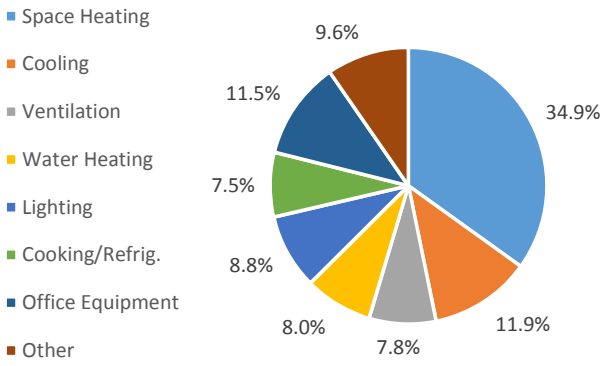


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Plumbing - Water Closets	INSTALL LOW-FLOW FLUSH VALVES/NEW WATER CLOSETS. WaterSense labeled water closets save water and reduce the energy required to pump water.	LC/NC; CAP
Plumbing - Urinals	INSTALL LOW-FLOW URINALS. WaterSense labeled urinals save water and reduce the energy required to pump water.	LC/NC; CAP