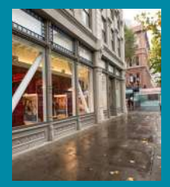
Portland Community College



FACILITIES PLAN TECHNICAL REPORTS

Safety and Security

In partnership with:

LAYNE CONSULTANTS INTERNATIONAL
Leaders in Security Management

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

The objective of this plan is to support the mission of the Portland Community College (PCC) Department of Public Safety (DPS) through the effective use of Electronic Public safety Systems (EPSS). PCC has made a significant investment is some very solid EPSS subsystems. However, these EPSS subsystems lack consistent application and/or performance to be effectively leveraged by PCC DPS operations. By addressing the subsystem deficiencies, these systems can be better utilized to enhance the overall effectiveness and efficiencies of PCC DPS operations. Once the EPSS subsystems are stabilize for predicable performance, their use can then be expanded to other areas across PCC.

The strategies used to accomplish this objective include:

Phase 1 – Enabling Phase

The enabling phase includes a game-plan that focuses on the PCC DPS organization to establish a solid foundation for the subsequent phases. The enabling phase focuses on two (2) important areas:

1. The management and oversight of EPSS and its subsystems.

2. The development of standards for the design, installation, maintenance, and operation of EPSS subsystems.

Without attention to these important areas, past investments in EPSS subsystems, as well as, all future EPSS upgrade and expansion projects are at risk.

Phase 2 – Stabilization Phase

The stabilization phase includes plans to correct EPSS subsystem deficiencies that adversely impact the effective use of EPSS by PCC DPS operations.

Phase 3 – Expansion Phase

The expansion phase includes upgrades and/or additions to electronic public safety system subsystems to areas where they do not currently exist. The expansion phase elements are to be addressed once the enabling and stabilization phases have been addressed.

A summary of the Safety & Security Plan Elements includes:

Safety and Security Plan Summary			
Priority Key			
		Critical Need	
		Important Need	
		Needed	
Phase 1 - Enabling Phase			**Budget Cost**
1	5.1.1.1	Electronic Public Safety System Program Manager	TBD
2	5.1.2.1	Electronic Public Safety System Administrator Position	TBD
3	5.1.3	Electronic Public Safety System Standards Development	$70,000.00
4	5.1.4	Risk Analysis for Mass Notification Systems	$50,000.00
	5.1.5	Future CEPTED Analysis	$80,000.00
Phase 2 - Stablization Phase			
Electronic Access Control System (EACS)			
1	5.2.1.1	Legacy Access Reconfiguration	$927,000.00
2	52.1.2	Integrate Overhead Doors for Lockdown (Design)	$15,000.00
Intrusion Detection Systems (IDS)			
1	5.2.2.1	Update Intrusion Detection System Zone Information	$30,000.00
2	5.2.2.2	Intrusion Detection/AMAG Integration Reconfiguration	$240,000.00
3	5.2.2.3	Duress/Panic System Reconfiguration	$58,000.00
4	5.2.2.4	Install New Duress Panic Buttons	$72,000.00
Video Surveillance and Recording System (VSRS)			
1	5.2.3.1	Upgrade Analog Cameras and Systems	$841,000.00
2	5.2.3.2	Balance Video Loads on Servers	$87,000.00
Mass Notification System (MNS)			
1	5.2.4.1	Eaton Waves Alternatives	$850,000.00
2	5.2.4.2	Optimize Rave Mass Notification	N/A
Emergency Communications System (ECS)			
1		None	

Phase 3 - Expansion Phase			
Electronic Access Control System (EACS)			
1	5.3.1.1	Add Intergation Between EACS and VSRS	$20,000.00
Intrusion Detection Systems (IDS)			
1	5.3.2.1	Install New Duress Panic Buttons	$72,000.00
Video Surveillance and Recording System (VSRS)			
1	5.3.3.1	Add Cameras at Duress/Panic Button Locations	$259,400.00
Mass Notification System (MNS)			
1		None	
Emergency Communications System (ECS)			
1	5.3.5.1	Study - Transition From Blue-light Phones	$25,000.00

2 INTRODUCTION

2.1 Project Scope

This Safety and Security Plan was developed in support of Phase 1 of the District-wide Portland Community College (PCC) Facilities Plan. The objective of This Safety and Security Plan is to have an accurate projection of PCC Department of Public Safety (DPS) electronic public safety systems (EPSS) component lifespans and repair or replacement costs for up to 30 years. This safety and security section include the following scope elements:

1. Identify and assess existing PCC DPS EPSS for the facilities identified in the PCC Building Inventory as listed in Appendix A – PCC Building Inventory. EPSS includes the following EPSS subsystems systems:

    a. Electronic Access Control System(s) (EACS)
    b. Intrusion Detection System(s) (IDS)
    c. Video Surveillance and Recording System(s) (VSRS)
    d. Mass Notification System(s) (MNS)
    e. Emergency Communication System(s) (ECS)

2. Perform on-site examinations of all EPSS subsystems using non-destructive on-site observations.
3. Review existing college-wide standards relating to EPSS.
4. Identify all EPSS system components and elements requiring maintenance, repair, modernization, or significant investment.
5. High-level cost estimates shall be provided through this effort. Projects slated for the 2017 bond measure shall be of importance. It is anticipated that most of the projects that move forward to the bond measure will be in deferred maintenance, capital, information technology, and public safety.

2.1.1 Project Deliverable

The project deliverable for this Safety and Security Assessment section of the PCC District-wide Faculties Report includes a Safety and Security Plan.

2.1.2 Project Methodology

The process for this assessment included the following:

1. A kick-off teleconference with PCC Department of Public Safety, IT representative, and PCC Bond Office.
2. Review of existing EPSS documentation provided by PCC (See Appendix B – Reference Material).
3. On-site review of existing EPSS information, configurations, topologies, and usage for the following EPSS subsystems:

    a. Electronic Access Control System(s) (EACS)
    b. Video Surveillance and Recording System(s) (VSRS)
    c. Intrusion Detection System(s) (IDS)
    d. Mass Notification System(s) (MNS)
    e. Emergency Communication System(s) (ECS)

4. Identify and review industry trends for electronic public safety systems at post-secondary education institutions.

3 PCC DEPARTMENT OF PUBLIC SAFETY (DPS)

3.1 PCC DPS Overview

The stated mission for the PCC Department of Public Safety (DPS) is: To promote a safe educational environment in partnership with the community by providing exceptional public safety services

through professionalism and dependability. This mission addresses much more than dealing with crime and criminal behavior. DPS is also responsible for:

- Emergency Preparedness and Response
  - Emergency Notifications
  - Emergency Preparedness
  - Emergency Evacuation Procedures
- Development and Enforcement of PCC's Safety/Security Related Policies
- Maintaining Crime Statistics and Report Development
- Access Control of Campus Facilities
- Administration and Monitoring of PCC's Electronic Public Safety Systems (EPSS)
- Safety and Security liaison with PCC Departments, Community, and First Responders.

DPS also provides numerous courtesy services across PCC campuses, such as:

- Safety Escorts
- Battery Jumps
- Vehicle Lock-outs
- Locking/Unlocking Facility Doors

3.1.1 PCC DPS Use of EPSS

The PCC DPS uses EPSS to enhance the overall effectiveness and efficiencies of PCC DPS operations; improving the safety of students, faculty, and visitors and the security of PCC assets. The presence of EPSS and its subsystems alone provides limited effectiveness in the mitigation of safety and security risks. The real benefit of the EPSS is realized when these subsystems are deployed in a strategic manner with defined objectives and expectations for their use. Some of the objectives of PCC DPS EPSS include:

1. Provide improved deterrence to criminal acts through the presence of EPSS.
2. Provide increased situational awareness across PCC campuses and facilities.
3. Provide increased effectiveness and efficiencies of DPS staff by using EPSS as a force multiplier.
4. Provide expedited dissemination of which emergency information to staff and students.
5. Provide effective access control to PCC facilities during normal and emergency operations.
6. Provide the availability of EPSS data in support of investigatory and evidentiary use.

3.2 Industry Trends for DPS

PCC DPS has participated in in the Oregon Campus Safety Work Group to align PCC's safety and security operations with other participating Oregon post-secondary education institutions. Recognizing the challenges of Public Safety at post-secondary education institutions to effectively mitigate the wide range of threats to campus safety, while also providing the many services to staff, students, and visitors, the Oregon Campus Safety Work Group issued the report Campus Safety at Oregon Post-Secondary Education Institutions (October 2016). The purpose of the Work Group was to identify strategies to better support public safety and emergency management at Oregon's postsecondary educational institutions. The Work Group used a comprehensive all-hazards approach to evaluate safety and disaster response, as well as recovery needs and focused on four categories to improve the safety and resilience of Oregon campuses:

1. Response, continuity, and recovery
2. Physical safety and law enforcement
3. Physical security and infrastructure
4. Behavioral threat assessment and prevention Given the expanding sphere of DPS responsibilities, the role of EPSS infrastructure

The Work Group recognized that on-going investments in infrastructure are a key component to campus safety. From electronic surveillance systems to interior locking doors, Public Safety needs additional infrastructure to make them safer. The Work Group made the following recommendations regarding Physical Security and Infrastructure:

1. Require all post-secondary education institutions to have ***campus security standards*** that consider the campus's size, complexity, and hours of operation; those standards must also incorporate crime prevention through environmental design principles. These standards should be integrated into campus planning efforts, capital projects, and major remodels.
2. Develop a physical-security grant program to help Post-Secondary Education Institutions fund critical public safety infrastructure including access control, cameras, alarms, data storage for video, mass notification, and lighting in existing buildings and campus infrastructure.
3. Review existing purchasing cooperatives and/or develop new options to leverage statewide purchasing power for physical security infrastructure, including but not limited to access control systems, cameras, alarms, data storage solutions, lighting, etc.
4. Identify promising practices for ***budgeting, maintenance, and replacement of security systems*** at postsecondary intuitions.

Recommendations 1 and 4 above are especially relevant to the scope of this document. The report recognized that the top challenge of security at post-secondary education institutions is a lack of resources or funding, followed by insufficient training, insufficient staffing or capacity, and the need for equipment like mass notification systems or access control. These recommendations are consistent with the assessment observation outlined within this report.

4 ASSESSMENT OF EXISTING EPSS

This purpose of this section is to present significant assessment and observation data that was used as the basis for the recommendations outlined in Section 5 - Safety and Security Plan.

4.1 Overview of PCC Electronic Public Safety Systems (EPSS)

The following paragraphs describes each PCC EPSS subsystem along with a high-level description of how they are used.

4.1.1 Electronic Access Control System(s) (EACS)

PCC has standardized on the AMAG Technology (AMAG) Symmetry security management system. The EACS may be one of the most effective EPSS subsystems. If access to assets is properly controlled, the risk to these assets is mitigated. The EACS can also provide situational awareness associated with forced doors, propped doors, and attempts by unauthorized individuals to access controlled areas.

The EACS:

- Provides effective technology to lockdown buildings/rooms.
- Provides the capability to throttle EACS behavior in response to various threat levels.
- Provides an effective visible deterrent element to unauthorized access.
- Provides an effective detection tool to assist PCC DPS in support of their assigned duties.
- Provides control and status of controlled and monitored access points.
- Provide an audit trail of historic access control and security alarm events.
- Reduce operating costs by reducing the financial impact of mechanically rekeying of locks.
- Provides and effective means to assign and revoke access rights and privileges of individuals, or groups of individuals for specific access points (doors) to specific days and times.
- Facilitates expeditious response to security alarm or other emergency conditions.
- Provides centralized lock/unlock capabilities to facilitate evacuation or lock-down operations.

4.1.2 Intrusion Detection System(s) (IDS)

Individual IDS systems are deployed in almost every PCC building. The IDS systems are essentially burglar alarm systems that are armed after-hours and disarmed prior to operating hours. When armed, these IDS systems are monitored by a 3rd-party central monitoring center. PCC has largely standardized on IDS intrusion panels manufactured by DMP.

4.1.3 Video Surveillance and Recording System(s) (VSRS)

VSRS refers to the security cameras and video recording monitoring equipment deployed across PCC campuses and used by PCC DPS. PCC has standardized on the Milestone XProtect video management system (VMS) platform to administrate, monitor, and record video data. The newer cameras and Milestone VMS are IP-centric systems; video data is transmitted via the data network. However, there are several legacy analog video systems still in operation across campus that have not yet been converted to state-of-the-art IP systems.

4.1.4 Mass Notification System(s) (MNS)

PCC has deployed two (2) separate systems for mass notification. Mass notification delivers real-time emergency messages to staff and students both on and off campus. The messages can be distributed to a wide-area or limited to select recipients. Using both an audio MNS as well as a multi-modal MNS provides a more effective distribution of emergency information to students, staff, and visitors. The two systems include:

Eaton Waves – Audio MNS
Rave – Multi-modal MNS

4.1.5 Emergency Communication System(s) (ECS)

The PCC ECS consists of the emergency “blue-light” phones that are distributed across many of the PCC campuses. The blue-light emergency phones are programmed to dial PCC DPS dispatch center and if no answer they dial a third-party central monitoring station. Staff and/or students that encounter a situation that presents a concern for their safety can activate the emergency phone to establish audio communications with DPS or central station staff to initiate the appropriate response. Used with VSRS, ECS provides emergency staff with video data to enhance their ability to assess the emergency and initiate the appropriate response.

4.2 EPSS Use Strategy

EPSS are tools that are available to be used, individually, or in combination with one another, to mitigate risk. As with any *tool*, they are most effective when they are used for the intended purpose and used by a skilled administrative and/or operations staff. Therefore, it is critical that the strategy for the application of these tools be defined. These systems provide several benefits for PCC DPS:

The holistic application of any EPSS should consider the following points:

1. The establishment of installation methods and operational procedures that define how and where the sub-system components are installed and how they are to be used. These systems and components can be applied in many ways; depending upon the expected operational result. Without detailed standards to define how they are to be installed, EPSS subsystems/components may be inconsistently deployed; resulting in disparate operation and varying levels of predicable performance.

2. The development of policies and procedures associated with EPSS subsystems. The application of EPSS subsystems without supporting policies and procedures to guide how they are to be managed, administrated, and used may be a detriment to PCC's security environment because there is an increased risk that they will be used improperly.

3. Establishing an EPSS program manager position to ensure that the established standards are applied, and policies and procedures followed.

4. Adequate trained and certified staff is required to administrate and operate EPSS.

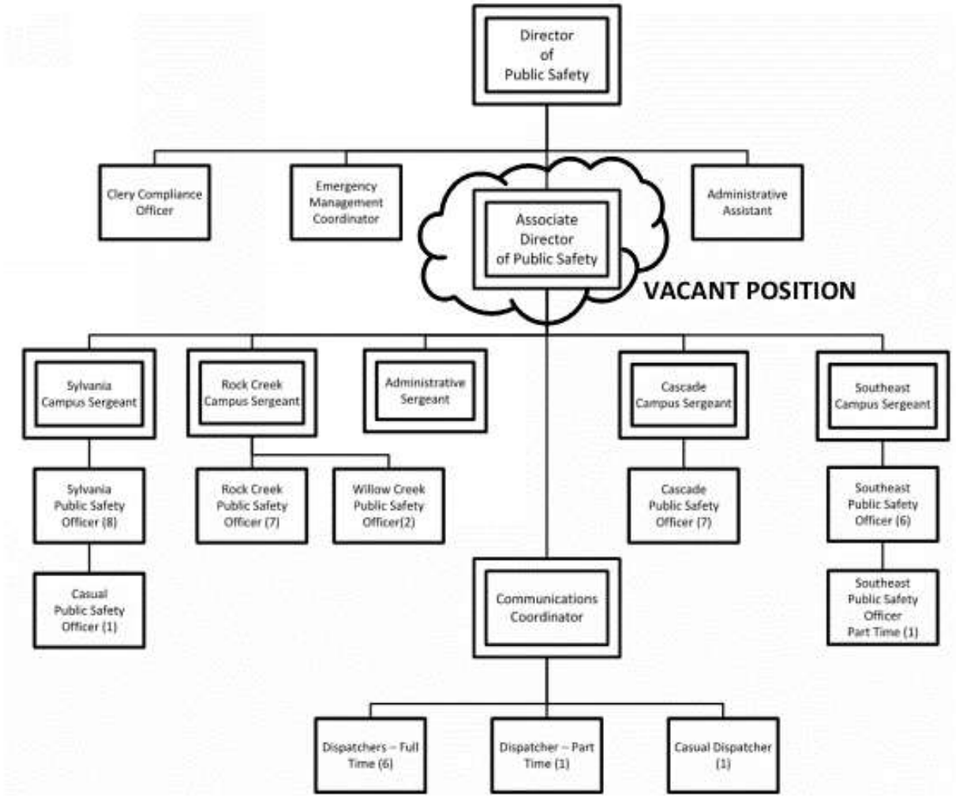
5. Today's EPSS are largely IT-centric. This means that they utilize the data network for transmission of system signals. It is important to establish a collaborative relationship with applicable IT staff to ensure EPSS is deployed across the data network in a way that conforms with the technical standards established by

4.3 EPSS Management & Oversight

PCC has made a significant investment EPSS to provide a safe and secure environment for PCC staff, students, and visitors. PCC has extensively deployed physical EPSS subsystems throughout PCC campuses and facilities. The command and control function of these subsystems, at the DPS dispatch center, relies on the data from these subsystems to coordinate DPS officer activities, expedite response to security incidents, and notify staff/students/visitors of security treats and incidents.

The physical deployment of these systems requires the organization to develop the rules, standards, and policies associated with the use of EPSS and its subsystems. Use of EPSS requires policies, procedures, and personnel resources for administration, management, deployment, and maintenance of these mission critical systems. Management and oversight are critical DPS components that contribute to operational consistency and predictability of performance of these systems. As can be seen from the current PCC DPS organizational chart, there are currently no positions dedicated to EPSS Management & Oversight.

Prior to the current PCC DPS leadership, the Director of Public Safety assumed primary responsibility for the deployment, administration, and maintenance of EPSS while the Associate Director of Public Safety managed DPS operations. Currently, the DPS Associate Director position is vacant; therefore, the current Director of Public Safety is solely responsible for EPSS as well as DPS operations. Effectively, the current Director of Public Safety has assumed responsibilities that were previously distributed across two management positions. The result is a deficiency of standards, policies/procedures, and staff resources to ensure effective use of EPSS and its subsystems.



4.4 EPSS Staffing

Over the past several years, PCC has identified that these EPSS subsystems were installed using inconsistent methods because of a lack of defined standards. Many of the methods used resulted in EPSS deployments that did not meet DPS operational expectations. Soon after installation of these systems, DPS recognized there were no properly trained and certified DPS staff positions to properly administrate and operate them. The Director of Public Safety has recognized the need for DPS staff resources to properly define, oversee, and enforce installation standards and to effectively program and administrate EPSS subsystems. The roles and responsibilities for these yet-to-be-defined positions. These positions will require specific skillsets and will require proper training and certification. Examples of these positions may include:

1. EPSS Program Manager

   The EPSS Program Manager would manage the standards associated with the deployment and operation of EPSS subsystems. This position would be the liaison with project designers and contractors to ensure EPSS is properly integrated into construction projects to meet the defined standards. The Program Manager would serve as liaison with Facilities Management Services, Information Technology, and other applicable PCC departments, to facilitate EPSS subsystem installation, use, and on-going maintenance.

2. Access Control Administrator

   This position serves as the point-of-contact with security contractors to ensure that programing attributes are consistent across projects. The position also provides data entry for card holder administration and report generation. The officer filling this position has recently received factory training on the AMAG access control system.

3. Security Video Administration – This position serves as the point-of-contact for the security video system. The position monitors the operational disposition of the various video platforms and coordinates repairs and upgrades. This position serves as the point-of-contact for requests for recorded video. The officer who has assumed this role, in addition to other officer duties, will be retiring within the next year.

4.5 Electronic Access Control System (EACS)

The AMAG Symmetry (AMAG) EACS is an industry-leading security management product. AMAG is widely deployed in campus environments like PCC. Unlike some other leading EACS manufacturers, AMAG software is only compatible with their own proprietary field hardware panels. Some other leading EACS manufacturers use open field panels that are compatible with multiple EACS software platforms. This means that a large investment in AMAG EACS typically results in a long-term commitment to the AMAG product since the costs to replace both software and hardware are prohibitive.

4.5.1 Existing EACS Configuration Summary

The PCC District-wide EACS configuration totals are:

705 Card readers
174 Aux. Outputs
241 Monitor Pts (Inputs)

Detailed EACS configuration data can be found in Appendix C – PCC EACS Configuration Summary.

4.5.2 Reconfigure Legacy Access Doors

The current industry standard for deploying access control on doors includes magnetic contracts and request-to-exit devices to properly enable monitoring of forced and/or propped doors on the AMAG system. Many access doors deployed at PCC, prior to realizing this standard during the DWAC project, did not include magnetic contracts nor request-to-exit devices. This means that these legacy access installations were effectively only an electronic lock and key system; ignoring some of the very powerful features of electronic access control such as door status, door forced alarm, and door propped alarm.

Potential legacy access installations that were not installed under the specifications for the District-wide Access Control Project are listed in Appendix D– Legacy EACS Locations.

4.6 Intrusion Detection Systems (IDS)

IDS is essentially burglar alarm systems installed in virtually every PCC building. The IDS are stand-alone systems. Door contacts, motion detectors, and other sensors are connected to the IDS panel to monitor door position and space occupancy within protected buildings. Each IDS can be armed and disarmed via an alpha-numeric keypad. The systems are armed (alarms on) after operating hours and disarmed (alarms off) prior to operating hours. The systems are monitored by third-party central monitoring station (Central Station). Alarms are transmitted to the Central Station via telephone line connection; although PCC is systematically converting the transmission method to IP over the internet.

PCC Buildings with IDS are listed in Appendix E – PCC IDS Building Listing. The chart also provides the Central Station account number, IDS panel type, and the number of points/zones associated with each panel.

4.6.1 IDS Integration with AMAG EACS

Some of the IDSs are integrated with the AMAG electronic access control system (EACS) to allow systems to be disarmed using an EACS key fob or access card. This function increases ease-of-use and provides an audit trail of who performed the arming function. The IDS is armed using the user's alpha-numeric code.

The method for integration of the IDS with AMAG EACS for arm/disarm function differs between buildings; due to a lack of a defined standard for such integration. This inconsistency of integration methods has resulted in operational problems. Cleaning staff attempting to arm/disarm IDS panels may follow the procedure used for one building and discovering that method does not apply to the building they are currently in. This can contribute to buildings not being armed; or, causing false alarms.

A list of which PCC building's IDS are integrated with the AMAG EACS are listed in Appendix F – IDS Integration with AMAG EACS.

4.6.2 IDS Zoning

The IDS are divided into multiple zone to independently identify the device in alarm and/or the location of the alarm within a building. IDS zoning throughout PCC has been determined to be inaccurate. Over time, as PCC facilities are renovated and/or reconfigured, the IDS zoning labels that define the alarm zone location have not been updated to reflect the building's current configuration. This is a serious condition since an alarm description may direct the security response to the wrong location. In the event of a valid alarm, this deficiency may cause sufficient delay resulting in the inability to arrive at the premise in time to mitigate the damage associated with an intrusion event.

It has been discovered that some IDS devices and zones have been removed, or rendered inoperable, to facilitate construction activities. In many cases these IDS devices were removed and not reinstalled or replaced. It was observed that there are some IDS zones that appear to be in alarm. Since the IDS zone descriptions are inaccurate, and the device(s) cannot be located, the area is no longer protected by the IDS and vulnerable to intrusion.

4.6.3 IDS Testing

There are no PCC DPS policies concerning testing of IDS. PCC recognizes that IDS zoning labels make testing problematic. While systems are armed every night, it is likely that some IDS devices (E.g. door contacts, motion detector, etc.) do not operate properly; if at all. If no serious loss is experienced, this deficiency goes unnoticed. However, if a loss or significant intrusion event is experienced, system failures will likely become a serious topic. The DMP systems have the ability to report any zones that do not change state within a defined period. This is a handy feature to facilitate failed components. However; to date, this feature has not been comprehensively used to assist in the identification of failed portions of the IDS.

4.6.4 Monitoring of IDS

IDS systems are monitored by a third-party central monitoring company: First Response. All IDS alarm signals are transmitted to First response. First Response then contacts the appropriate PCC point-of-contact as established by monitoring agreement. Since PCC DPS is not a 24/7/365 security operation, First Response is also contracted to physically respond to after-hours IDS alarms.

4.6.5 IDS Product Alternatives

Alternatives to the DMP IDS panels have been considered. However, the considerable population of DMP systems makes it impractical to change to another vendor. Further the product data used in the comparison may not have demonstrated an apples-to-apples comparison.

4.6.6 IDS Alarm Transmission via Data Network

Legacy systems transmitted alarm/trouble signals to the third-party central monitoring station via hardwire telephone lines. As PCC phone systems transitioned to newer technologies (I.e. VoIP), the reliability of alarm transmission decreased. Today's IDS are capable of transmitting alarm signals via the data network and ultimately the internet. PCC has begun to transition IDS systems from traditional phone lines to a connection through the PCC data network. While the majority of the DMP panels are capable of network transmission, there may be some smaller panels that must be upgraded to accomplish this initiative. The cost of panel upgrades for these small panels is minimal; under $500.00 each.

4.6.7 IDS and Duress Functionality

Duress/Panic buttons are critical life safety components. These devices allow staff to request emergency assistance in the event they experience an event that presents a potential risk to their personal safety, or the safety of others. PCC has deployed duress/panic buttons extensively across PCC facilities. However, the method in which duress buttons have been deployed, and/or the way they are monitored and responded to differ. Duress systems and buttons have not been installed consistently across PCC. This inconsistency presents a serious safety and security risk due to a lack of predicable system performance.

In some locations, the duress/panic buttons are only wired to input points on the AMAG system panel(s); reporting a duress conditions only on the AMAG system; transmitting the alarm only to PCC Public Safety Communications Center during operating hours. In other locations the duress buttons are only wired to the local IDS; transmitting the alarm only to the third-party Central Station Monitoring (CSM) central station (24/7/365). In a third configuration, the duress/panic alarms are wired to both input points on the AMAG system panel(s) and to the local IDS; transmitting duress/panic alarms to both the PCC Public Safety Communications Center (during operating hours) as well as the third-party Central Station Monitoring (CSM) central station. This inconsistency in reporting these life safety alarms creates the potential for inconsistency in appropriate assessment and response; creating a significant risk to the alarm initiator.

The tables in Appendix G – Duress Reporting Matrix identifies the locations of duress buttons. The table also identifies which system the duress buttons are connected to. Duress/Panic buttons are not documented as being installed at the following PCC facilities:

- Metro
- Swan Island
- Willow Creek
- Newberg
- Downtown Center

4.6.7.1 Duress Button Training

The duress button training that has been provided to users has been inconsistent. Although PCC DPS has attempted to educate users on when, and when not, to activate the panic buttons, they are continually used as an expeditious alternative to a telephone call to DPS. The current training program has not been enough to incent users to follow the desired protocol for duress button use.

4.6.7.2 Duress Button Video Assessment

The ability to quickly assess duress alarms using video surveillance has not been deployed as part of the duress system. Using video data would allow DPS to respond to duress alarms in an appropriate manner that will keep officers from blindly responding to an unsafe situation. This would require a video view of each duress button location.

4.6.7.3 Duress Response Strategy

Currently, PCC DPS directly responds to duress alarms with PCC DPS officers. The intent of this current practice is for officers to assess the situation before requesting law enforcement assistance. However, this strategy may potentially delay effective law enforcement response; putting both the duress user and responding PCC DPS officer at risk.

4.7 Video Surveillance and Recording Systems (VSRS)

PCC has deployed VSRS extensively across PCC campus. PCC DPS has selected the Milestone XProtect video management system (VMS) software as the standard for VSRS. Milestone is a network-centric system that transmits/received video data across the Ethernet data network. Because VSRS has been deployed over several years, some of the earlier installed systems were analog; or, hybrid using a digital recorder with analog cameras. There are several of these analog installations still in place.

The challenge with a mixture of systems across the PCC campuses is that there is not a single user interface that allows monitoring personnel to view all cameras from the control center. In fact, there are systems installed at PCC that cannot be access from the DPS control enter. This severely impacts PCC DPS operations since the benefits of VSRS cannot be fully leveraged in support of DSP operation.

4.7.1 Legacy Analog Video Systems

Legacy analog video systems use antiquated Digital Video Recorders (DVRs) and, in many cases) analog cameras. These analog video system locations are listed in Appendix H – PCC Analog Video Systems. The existing DVRs are either as manufactured by Dedicated Micros (DM) or Integral Technologies (INTEGRAL). Both DVRs are effectively obsolete and no longer supported; with DM and INTEGRAL both acquired by Schneider Electric several years ago.

There are several problems associated with these legacy systems:

1. Since these systems are not part of the campus-wide Milestone system, the video must be viewed on a proprietary viewer. In some cases, the dispatch center does not have access to video on these older systems. This severely limits the effective use of the video for surveillance, event assessment, and forensics uses.

2. The legacy video systems are vulnerable to catastrophic failure. These systems are obsolete and the ability to repair these units are becoming almost impossible. A catastrophic failure would result in loss of all video data associated with the failed unit.

3. The consistency and quality of recorded video is questionable. There is no consistent capacity for stored video and the quality of stored video is poor.

4. The ability to off-load recorded video for forensic, or other investigative purpose, is extremely difficult. The format of off-loaded video is not acceptable to many law enforcement agencies; limiting the value of recorded video data.

5. In many cases, analog video cameras do not provide the image quality, low-light capability, and other technical features that are now standard in today's IP (network) cameras.

4.7.1.1 Analog Cameras

Many of the legacy systems use older analog cameras. These cameras lack image quality, low-light capability, and other valuable features that are standard on today's state-of-the-art IP (network) cameras. These analog cameras are not natively compatible with the new network-based Milestone VMS; without the use of analog/network converters.

A list of legacy analog camera locations can be found in Appendix I – Analog Camera Locations.

4.7.2 Video Server Capacity

It has been determined that several of the existing Milestone network video recorders (NVRs) are experiencing performance problems due to overloading: attaching too many cameras to a single

server. This is likely due to neglecting to perform the necessary calculations to ensure that the data load is within the operational specifications of the NVR server hardware.

4.8 Mass Notification System (MNS)

4.8.1 Risk Analysis for Mass Notification Systems

NFPA 72 provides requirements for the interface, notification, and supervision of mass notifications systems. As is the case at PCC where a mass notification system is interfaced with a fire alarm system, NFPA 72 provides requirements for this interface. Equally important, NFPA 72 24.3.11 outlines requirements for conducting a risk analysis for mass notification/emergency communications. Conducting and documenting a risk assessment in accordance with NFP 72 24.3.11 is mandatory since the risks identified for the mass notification system responses dictate the messages required as well as the actual system design.

The mass notification solutions were designed and installed without the benefit of the NFPA required risk analysis to guide the deployment, programming, and use.

4.8.2 Waves 8 Upgrade, Phase 1 and 2

The Eaton Waves audio-visual in-building mass notification system has been installed in many of the PCC campus facilities. The systems were recently upgraded to the current version Waves 8. This upgrade included a software upgrade as well as a hardware upgrade. Some serious problems were experienced during the upgrade. There were two (2) very important issues that challenged and delayed completion of the upgrade:

1. PCC relied heavily upon the radio frequency (RF) transmission of system communication. Eaton had end-of-life the technology deployed at PCC. Creating the potential for significant unexpected costs associated with field equipment replacement. The current RF unites will continue to be used until they fail; then an urgent reconfiguration will be necessary.

2. The Waves 8 upgrade operation now relied heavily upon transmission across the PCC data network. There were serious compatibility issues with the Eaton network requirements and the configuration standards used by PCC.

It became clear during the upgrade that the relationship between Eaton (manufacturer) and Convergint (deployment contractor) is strained. PCC relied on Convergint for system information and the information provided to PCC was largely inaccurate. It was difficult to determine why so much information was inaccurate or misunderstood by both Eaton and Convergint. PCC has requested alternatives to Convergint as a deployment contractor, but to date no viable alternatives have been provided.

4.8.3 Rave Mobile Safety Deployment

Recently PCC has deployed the Rave product for mass notification and communication. The Rave Mobile Safety platform provides the capability for comprehensive mass communication that integrate phones, mobile devices, email, social media, speaker systems, website content, signage systems and other modalities.

The Rave deployment included an opt-in activity that requires user to agree to receive alerts on their device(s). The opt-in response to Rave was somewhat low. PCC has considered changing it to a opt-out to increase the level of participation.

4.9 Emergency Communications Systems (ECS)

ECS allows persons to request assistance should they feel they have encountered an unsafe situation, or experience an emergency requiring response. PCC has long used blue-light emergency phones for this purpose. The blue-light phones are distributed

There are 32 existing emergency blue-light phone across the PCC campuses. A detailed list of the phone locations can be found in Appendix J – Emergency Blue Light Phone Locations.

4.9.1 Disparate ECS Technologies

Much like other EPSS subsystem components that have been installed over time, the ECS consists of several vintages of blue-light phones. Some of these devices are analog communication devices converted for use with the digital phone system. Others are IP/SiP phone devices. The disparate technologies create challenges for expeditious service and repair.

4.9.2 ECS Monitoring

During PCC campus operating hours, emergency blue-light calls for assistance are answered by PCC DPS central control staff. Central control staff can then dispatch PCC DPS officers for expeditious response. However, after PCC operating hours, the calls for assistance are answered by the 3rd-party central monitoring station and response performed by the central station field security personnel; taking much more time for response.

4.9.3 Assessment of ECS Calls

In many cases, VSRS cameras are positioned to provide monitoring staff with valuable video data that helps them assess the emergency and dispatch the appropriate response. Cameras do not adequately view all emergency blue-light phone locations, so the level of assessment and response is not consistent across the emergency blue-light phone population.

4.9.4 Emergency Blue-light Phone Use

While these emergency devices are widely deployed in post-secondary campus environments, they are seldomly used. Some institutions have questioned the continued use due to the low level of use and the costs associated with maintaining these units.

5 PCC SAFETY AND SECURITY PLAN

The assessment data presented in Section 4 of this report serves as the basis for this Safety and Security Plan. The objective of this plan is to support the mission of the Portland Community College (PCC) Department of Public Safety (DPS) through the effective use of Electronic Public safety Systems (EPSS). PCC has made a significant investment is some very solid EPSS subsystems. However, these EPSS subsystems lack consistent application and/or performance to be effectively leveraged by PCC DPS operations. By addressing the subsystem deficiencies, these systems can be better utilized to enhance the overall effectiveness and efficiencies of PCC DPS operations. Once the EPSS subsystems are stabilize for predicable performance, their use can then be expanded to other areas across PCC. To preserve operational integrity, the EPSS subsystems will require on-going upgrades and maintenance. The strategies used to accomplish this objective include:

Phase 1 – Enabling Phase

Phase 2 – Stabilization Phase

Phase 3 – Expansion Phase

A summary of the Safety and Security Plan elements and their respective priorities can be found in Appendix K – PCC Safety and Security Plan Summary.

Note: The tactics associated with these strategic phases may be performed sequentially and well as concurrently.

5.1 Phase 1 - Enabling Phase

The enabling phase includes a game-plan that focuses on the PCC DPS organization to establish a solid foundation for the subsequent phases. The enabling phase focuses on two (2) important areas:

3. The management and oversight of EPSS and its subsystems.

4. The development of standards for the design, installation, maintenance, and operation of EPSS subsystems.

Without attention to these important areas, past investments in EPSS subsystems, as well as, all future EPSS upgrade and expansion projects are at risk. PCC DPS needs dedicated, trained, and certified positions to ensure that the work associated with EPSS is designed, installed, maintained, and operated in accordance with established standards to meet operational expectations.

5.1.1 EPSS Management & Oversight

Currently, the PCC DPS organization does not include a dedicated position responsible for effective EPSS Management & Oversight of EPSS. To date ad hoc fixes have been implemented without the benefit of developing a documented long-term strategy to maintain PCC's significant investment in EPSS. Currently, the Director of Public safety is tasked with the responsibility of DPS operations as well and oversight of EPSS. These two very different focuses were previously distributed across two positions: Director of Public safety and Associate Director of Public safety (Currently vacant position). Effective management of both sides of the department, operations and EPSS, is virtually impossible to accomplish with a single position. The lack of a trained and certified management position, dedicated to EPSS, presents a significant risk to the current investment in EPSS and all future EPSS subsystem upgrade and expansion projects.

5.1.1.1 .EPSS Program Manager Position

Due to the wide range of EPSS initiatives involved, an EPSS program manager position should be considered. The EPSS program manager's role will require a degree of technical knowledge but will also emphasize business management skills.

- Coordinate the operational needs associated with EPSS as an effective tool for DPS operations.
- Maintain PCC's EPSS standards and update as necessary.
- Serve as the primary point-of-contact for PCC-generated EPSS requests and conduct associated field surveys associated with those applications.
- Serve as the primary point-of-contact for EPSS for PCC construction and renovation initiatives.
- Serve as the primary point-of-contact for maintenance of EPSS including coordination of service and repairs with internal PCC resources (IT and Facilities) and vendors.
- Coordinate internal PCC resources and vendors for the execution of EPSS projects.
- Manage the administration of EPSS programming and data entry.
- Manage EPSS testing and commissioning to ensure compliance with project requirements and reliable system performance.
- Assist in the development of EPSS requirements associated with system upgrades and construction and renovation projects.
- Contribute to EPSS technology roadmaps for system replacement and upgrades.
- Develop budgets associated with EPSS projects and on-going lifecycle costs.

5.1.2 EPSS Support Positions

5.1.2.1 EPSS Administrator Position

An EPSS Administrator is required for data entry and programming of EPSS.

- Perform daily data entry associated with access control card holder management.
- Coordinate EPSS programming attributes with project vendors to ensure operational consistency and compliance with established standards.
- Serve as the primary point-of-contact for PCC and/or law enforcement requests for EPSS data (I.e. card holder report, EPSS transaction reports, recorded video data, etc.).

5.1.3 EPSS Standards Development

PCC has acknowledged the need to develop standards for the installation and programming of EPSS subsystems. The lack of documented standards has contributed to inconsistencies in the way systems were installed, configured, and programmed. The result has been inconsistent system operation and a lack of predicable performance. An initiative to develop EPSS standards is currently underway. The development of standards will include coordination with applicable PCC staff. The coordination effort shall include on-site meetings and working sessions and/or teleconference and/or web meetings as required.

Implementation of Phase 1 and/or Phase is at risk unless standards are established to guide the work to be performed.

Rough-order-of-magnitude cost for standards development is $70,000.00.

5.1.3.1 Electronic Access Control Systems (EACS) Standards

1. Develop a list of approved ACS devices to ensure operational compatibility and consistent/predicable operation, including, but not limited to:

    - Card Readers
    - Door Status Devices (Contacts)
    - Request-to-exit Devices (REX Motion, REX Push-buttons, etc.)
    - Electric Door Hardware
    - Low Voltage Power Supplies
    - Batteries

2. Develop installation template standards to ensure configuration of ACS panels/modules and power supplies are consistent in support of effective/efficient maintenance and support. The standard shall include low voltage power calculations and battery requirements. Note: Standards shall address 120VAC emergency power for sites with and without generator power.
3. Develop standard for connection of ACS panels and devices to the network infrastructure. The standard shall include PCC IT configuration and coordination requirements.
4. Develop ACS cabling standards to include: cable types, installation requirements, and color coding. Standard shall reference applicable PCC Telecommunication Standards.
5. Develop ACS device mounting standards to include: mounting methods and heights.
6. Develop ACS standard door details to ensure consistent operation and facilitate effective/efficient maintenance and support. Details to include wiring diagrams for card readers, electric locking hardware, door position switches, request to exit devices, ADA door operators, and IDS integration. Details shall be created for like door configurations (e.g. double exterior entry doors, single interior entry doors, etc.). It is understood that some existing details, such as those developed by ASG, may be incorporated into the standard.
7. Develop ACS programming guidelines to ensure consistent programming of new ACS panels and devices to include, but not limited to: network configuration data, naming conventions, configuration settings, etc. The programming guidelines will include the procedure and process for coordination with PCC IT and safety and security system administrators.
8. Develop standards for acceptance testing, commissioning, and project close-out documentation. Existing acceptance testing, commissioning, and project closeout standards developed by Stantec shall be reviewed, revised (if required), and incorporated as applicable.

5.1.3.2 Intrusion Detection System (IDS) Standards

1. Develop a list of approved IDS devices to ensure operational compatibility and consistent/predicable operation including, but not limited to:

    - Door Status Devices (Contacts)
    - Motion Detectors
    - Glass Break Sensors
    - Audible/Visual Signaling Devices
    - Low Voltage Power Supplies
    - Batteries

2. Develop installation template standards to ensure configuration of IDS panels/modules, keypads, and power supplies are consistent in support of effective/efficient maintenance and support. The standard shall include low voltage power calculations and battery requirements. Note: Standards shall address 120VAC emergency power for sites with and without generator power.

3. Develop IDS cabling standards to include: cable types, installation requirements, and color coding. Standard shall reference applicable PCC Telecommunication Standards.

4. Develop IDS device mounting standards to include: mounting methods and heights.

5. Develop IDS standard wiring diagrams for motion detectors, door position switches, duress buttons, signaling devices, and integration to ACS.

6. Develop standards for the deployment of duress buttons and connections (s) to applicable IDS. Standard shall include user training and alarm response procedures as coordinated with Public safety.

7. Develop IDS programming guidelines to ensure consistent programming of new IDS panels and devices to include, but not limited to: Zoning configurations and conventions, network configuration data, naming conventions, configuration settings, etc. The programming guidelines will include the procedure and process for coordination with PCC IT and safety and security system administrators.

8. Develop standards for integration to AMAG, including functional requirements.

9. Develop standards for acceptance testing, commissioning, and project close-out documentation.

5.1.3.3 Video Surveillance and Recording Systems (VSRS) Standards

1. Develop a list of approved VSRS devices (I.e. cameras, ethernet extenders, PoE injectors, fiber optic Tx/Rx, VSRS servers/storage, etc.) to ensure operational compatibility and consistent/predicable operation. NOTE: Review and consideration of the Stantec Camera Configuration Report shall be reviewed, revised (if required), and incorporated as applicable.

2. Develop VSRS cabling standards to include: cable types, installation requirements, and color coding. Standard shall reference applicable PCC Telecommunication Standards.

3. Develop VSRS device mounting standards to include: mounting methods and heights.

4. Develop VSRS programming guidelines to ensure consistent programming of new VSRS devices to include, but not limited to: Camera settings (IP addresses, data stream configurations, security settings, data speed, data compression, video motion detection, etc.), network configuration data, naming conventions, NVR location, NVR configuration settings, data backup, etc. The programming guidelines will include the procedure and process for coordination with PCC IT and safety and security system administrators.

5. Develop standards template for camera scene picture density and video storage.

6. Develop standards for acceptance testing, commissioning, and project close-out documentation.

5.1.3.4 Mass Notification System (MNS) Standards

1. Develop standards relating to the operation, maintenance, and repair of the existing Eaton Wave system.

2. Standard shall identify migration path for potential upgrades and/or expansion of the existing Eaton Wave system.

3. Develop standards for the future Rave Alert Campus Emergency Notification System.

4. Identify any integration between Eaton Wave and Rave Alert systems, if any.

5.1.4 Risk Analysis for Mass Notification System

NFPA 72 outlines the requirements for a risk analysis for the use of mass notification. When a mass notification system is installed, the system is required to comply with NFPA 72. When planning a mass notification system, a risk analysis is basically mandatory. To date PCC has deployed both the Eaton Wave system and the Rave system without this critical first step.

A typical risk analysis will consider the unique characteristics of the buildings, areas, spaces, or campuses being covered and evaluate the condition of the occupants. Finally, local conditions, equipment, and operations also are considered, and potential events. These events include those listed by NFPA 72: natural hazards (geological, meteorological, and biological events), human-caused events, both accidental and intentional, and events caused by technology.

Rough-order-of-magnitude for a mass notification risk assessment is $50,000.00.

5.1.5 Future CPTED Assessment

CPTED is an environmental criminology theory based on the proposition that the appropriate design of the surrounding environment can improve the quality of life by deterring crime and reducing fear of crime. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts. Research into criminal behavior shows that the decision to offend or not to offend is more influenced by cues to the perceived risk of being caught than by the cues associated with reward or ease of entry. Essentially, if the perceived risk outweighs the gain, the offender is more apt to pass the target by. Consistent with this research, CPTED based strategies emphasize enhancing the perceived risk of detection and apprehension. CPTED strategies attempt to reduce crime and fear of crime in a target setting by:

- Reducing criminal opportunity.
- Fostering positive interaction among legitimate users of the setting.

CPTED emphasis is on prevention rather than on apprehension. CPTED deviates from the traditional target hardening approach. The traditional target hardening approach focuses predominately on denying access to a crime target through physical or artificial barrier techniques (locks, fences, gates, etc.). Often the natural and normal uses of the environment can accomplish the effects of mechanical hardening and surveillance.

Rough-order-of-magnitude cost for conducting a CPTED analysis across PCC facilities is $80,000.00.

5.2 Phase 2 - Stabilization Phase

The stabilization phase includes plans to correct EPSS subsystem deficiencies that adversely impact the effective use of EPSS by PCC DPS operations.

5.2.1 Electronic Access Control System (EACS)

5.2.1.1 Reconfigure Legacy EACS Doors

It is recommended that legacy electronic access control system doors be upgraded to provide consistent and predicable performance in conformance with the standards established per paragraph 5.1.3.1.

Rough-order-of-magnitude budget for this recommendation is $927,000. Detailed cost information by PCC building can be found in Appendix L – EACS Reconfiguration Detail.

5.2.1.2 Integrate Overhead Doors for Lockdown

One of the lkey benefits of electronic access control systems is the ability to expeditiously effect lock-down in response to an immediate threat (I.e. Active shooter). While PCC has incorporated lockdown at access-controlled doors, a significant vulnerability is found at overhead garage-type doors. Many of these doors are not fitted with motorized operators, making the ability for automated lockdown problematic.

This important system element will require a detailed assessment and engineered solution to determine the door-by-door requirements to enable them to be automatically closed in response to a lockdown via the electronic access control system.

Rough-order-of-magnitude cost for this assessment/engineering task is $15,000.00. Costs associated with modification of doors for integration into the electronic access control system is to be determined as a result of the assessment activity.

5.2.2 Intrusion Detection System (IDS)

5.2.2.1 Update IDS Zoning Information

It is recommended that intrusion panel zoning be updated to reflect current facility and room designations. It should be noted that there is a project underway to rename facilities and rooms according to a new naming convention.

This recommendation will require a detailed site survey of each PCC facility to:

1. Trace existing IDS wiring to identify IDS devices on each zone.
2. Identify the location of individual IDS detection devices.
3. Document the disposition of IDS zone cabling, detection devices, and detailed location information.
4. Reprogram IDS to reflect correct zoning information.
5. Communicate IDS zoning information to the 3rd-part central monitoring station.

Rough order of magnitude budget for this recommendation is $30,000.00.

Note: Due to the critical nature of this plan element, this work should be initiated immediately, and concurrent with IDS standards development.

5.2.2.2 Reconfigure IDS Integration with AMAG

The remainder of DMP intrusion panels should be integrated with AMAG for card reader disarming of intrusion panels. This reconfiguration should conform with the intrusion detection system standards developed under paragraph 5.1.3.2 above. This recommendation would enable consistent operation of intrusion disarming throughout all PCC facilities.

Rough-order-of-magnitude budget for plan element per intrusion panel is $240,000.00. A detail of rough-order-of-magnitude cost per building can be found in Appendix M – IDS/AMAG Reconfiguration by Building.

5.2.2.3 Duress/Panic System Reconfiguration

Based upon the intrusion detection system standards developed under 5.1.3.2 above, duress/panic buttons deployed at Cascade, Rock Creek, Southeast, and Sylvania must be assessed and reconfigured so that they are connected to both AMAG and the intrusion detection system. This reconfiguration will provide a more predicable transmission of emergency duress signals; enabling a more expeditious assessment and response by monitoring personnel. to provide consistent and predicable operation.

Rough-order-of-magnitude budget for this recommendation is $58,000.00. Detailed cost information for duress system reconfiguration by building can be found at Appendix N – Duress System Reconfiguration Detail.

5.2.3 Video Surveillance and Recording System (VSRS)

5.2.3.1 Upgrade Analog Cameras and Systems

The current analog video systems prevent all PCC cameras to be accessed from a single location via a common user interface. It is critical to get all potential camera views integrated in the PCC standard Milestone XProtect platform to achieve this necessary functionality.

Rough-Order-of-Magnitude costs for this plan element is $841,000.00. Cost detail by building can be found in Appendix P –Analog Camera Upgrade Detail.

5.2.3.2 Balance Video Loads on Servers

To achieve predictability of performance across all video surveillance and recording system network video recorder (NVR) servers, it is important to perform video storage and bandwidth calculation per the video surveillance and recording system standards under the standards development plan element in 5.1.3.3 above. Once the video bandwidth and storage requirements are determined. Cameras can then be properly distributed across network video recorder servers to level out performance and ensure the recorders offer the desired video retention rate. Site may include:

Cascade CANVR01
Cascade CANVR02
Rock Creek RCNVR01
Southeast SENVR01
Southeast SENVR02
Sylvania SYNVR01

Rough-Order-of-Magnitude budget for this plan element is $87,000.00.

5.2.4 Mass Notification System (MNS)

5.2.4.1 Eaton Waves Alternatives

A significant investment has been made in the Eaton Waves system so there is a reluctance to abandon its use. Eaton Waves deployments continue despite some very serious implications:

1. As the RF transmission hardware fails, Waves systems will need to be reconfigured with new hardware that relies upon data network transmission. The costs associated with these failures are likely to be high since they will be implemented in a reactive manner versus a planned proactive manner.

2. Because the Wave in-building mass notification technology uses the fire alarm signaling appliances for distribution of messages, it is subject to applicable provisions of NFPA 72-2016 Chapter 24, Emergency Communications Systems. Beyond the extensive technical requirements, Chapter 24 outlines the requirements for Risk Analysis for Mass Notification Systems (24.3.11). Because mass notification systems may be required to serve very specific yet very varied needs, mass notification systems design re-quires significant reliance on the risk analysis. Such a risk analysis has not been performed at PCC.

3. The future of the Waves product line within the Eaton product portfolio is remains an unknown. PCC's experience with Eaton is that it relies on a small staff and product sales appear to be quite small considering the mass notification market. This may be due to the increased use of robust multi-modal notification systems such as Rave. The high installation and upgrade costs make deployment of in-building audio-visual signaling systems such as Waves more difficult to justify.

The continued use of Waves in-building mass notification systems may be difficult to sustain due to the questionable future of the product line and the unpredictability of upgrade costs. It is recommended that a plan to phase out Waves and increasing the use of the Rave product be developed and implemented.

A potential alternative to the Eaton Waves is the Edwards EST/Fireworks platform. A diagram depicting migration from Waves to EST/Fireworks can be found in Appendix Q – Edwards EST/Fireworks Migration Diagram.

Rough-order-of-magnitude cost for this migration is $850,000.00.

5.2.4.2 Optimize Rave Mass Notification

The future of emergency communications/mass notification is clearly headed toward multi-modal solutions such as Rave. Currently the Rave system seems to have been implemented as an

additional method of communication versus a potential replacement for the in-building Waves system. It is recommended that an implementation plan be developed to increase the success of opt-in participants to include the following; as communicated by Rave Mobile Safety:

1. Internal Education - Before the public launch, ensure internal staff is aware of your new Alert system and have signed up. Internal education is a great way to test messaging and the registration process.

2. Press - Launch Issue a press release and host a press conference about the Alert system that encourages residents to sign up for free. Highlight the benefits of signing up and make it clear how the alerts will be used and how often they will be sent.

3. Online Promotion - Leverage any existing online presence with Alert promotion. This can be easily done with website web badges, social media graphics, and banner advertising.

4. Electronic Communication - Send an email blast with a clear call-to-action to sign up for the Alert system. Provide text and an image to be included in any electronic newsletters being distributed. The beauty of electronic communications is that signing up for Alerts is only 1 click away.

5. Develop Community Partnerships - Any community facing event is an opportunity to promote and drive Alert registrations. Work with local business and nonprofits to provide them content and materials to promote sign ups.

6. Printed Materials, Direct Mail Campaigns, Bill Inserts - Printed flyers and brochures are great to hand out or send through the mail. Whether you send targeted letters to residents or insert letters into existing utility bills, these targeted print campaigns have large impact.

7. Pre and Post Storm Education - Issue a press release before and after a weather emergency or disasters urging residents to stay informed and to opt-in to receive public safety information.

The Rave product used by PCC has several functional software modules to enhance the use of the product. These include integration with the audio mass notification system (Eaton Waves) so that a single action can initiate emergency message distribution.

It is recommended that PCC discuss the ways in which Rave can be expanded beyond its present use.

5.2.5 Emergency Communication System (ECS)

None

5.3 Phase 3 – Expansion Phase

The expansion phase includes upgrades and/or additions to electronic public safety system subsystems to areas where they do not currently exist. The expansion phase elements are to be addressed once the enabling and stabilization phases have been addressed.

5.3.1 Electronic Access Control System (EACS)

5.3.1.1 Add Integration between EACS and VSRS

Both the AMAG electronic access control system (EACS) and the Milestone video surveillance system (VSRS) has integration arability to enable video actions in response to pre-determined EACS events. This integration helps aid monitoring personnel to quickly assess EACS alarms/events so that they can mount the appropriate response; improving the overall alarm/event/incident response.

Rough-order-of-=magnitude cost for this integration is $20,000.00.

5.3.2 Intrusion Detection System (IDS)

5.3.2.1 Install New Duress/Panic Buttons

Based upon the intrusion detection standards developed under 5.1.3.2 above, duress/panic be deployed at the following PCC locations to provide a consistent level of application of this important intrusion detection element. PCC sites include:

- Metro
- Swan Island
- Willow Creek
- CLIMB
- Newberg
- Downtown Center

Rough-order-of-magnitude budget for this plan element is $72,000.00. Detailed costs per building can be found in Appendix O – Duress/Panic Addition Detail.

5.3.3 Video Surveillance and Recording System (VSRS)

5.3.3.1 Add Cameras at Duress/Panic Button Locations

The ability to assess duress/panic alarm enhances the effectiveness of the response. Having video data of the incident allows monitoring staff to tailor the response to the severity of the threat; increasing the safety of responding officers.

Rough-Order-of-Magnitude for this plan element is $259,400.00. Detailed cost by campus can be found in Appendix R – Duress camera Detail.

5.3.4 Mass Notification System (MNS)

None

5.3.5 Emergency Communications Systems (ECS)

5.3.5.1 Study - Transition From ECS

Emergency (Blue Light) stations have been traditionally used for emergency communications for many years. They have become an expected element across campuses and parking lots. However, the effectiveness of these units remains in question. Most users report that the call boxes are rarely used. The University of Central Missouri (UCM) communicated that they intend to phase out the call boxes in favor of mobile device signaling. They cited high on-going maintenance costs for a technology that is rarely used. UCM stated that most of calls received from call boxes were nuisance calls following an athletic or social event. They felt that a mobile device technology would be more cost effective to maintain and more likely to be used by students. Calls imitated from call boxes are limited to the call box location where mobile devices can be used anywhere and signal the user's exact location via GPS coordinates.

It is recommended that the Rave Panic Button Incident Response feature be evaluated as a future replacement for static blue-light call boxes.

Rough-order-of-magnitude cost to conduct a study for the transition from emergency blue-light phones is $25,000.00.

6 APPENDIX A – PCC BUILDING INVENTORY

Campus and Building			
Campus	Building Abbrev	Building Name	Building AiM Number
Sylvania (SY)	Campus	General Campus	1000GC
Sylvania (SY)	AM	Automotive Metals	1010
Sylvania (SY)	ASB	Automotive Storage Building	1015
Sylvania (SY)	BK	Bookstore	1020
Sylvania (SY)	CC	College Center	1030
Sylvania (SY)	CSB	College Services Building	1040
Sylvania (SY)	CT	Communication Technology	1050
Sylvania (SY)	HP	Heat Plant	1060
Sylvania (SY)	HT	Health Technology	1070
Sylvania (SY)		Gate House	
Sylvania (SY)	LRC	Library	1080
Sylvania (SY)	PAC	Performing Arts Center	1090
Sylvania (SY)	SCB	South Classroom Building	1100
Sylvania (SY)	SS	Social Science	1110
Sylvania (SY)	ST	Science Technology	1120
Sylvania (SY)	TCB	Technology Classroom Building	1130
Cascade (CA)	Campus	General Campus	2000GC
Cascade (CA)	CH	Cascade Hall	2005
Cascade (CA)	JH	Jackson Hall	2010
Cascade (CA)	MAHB	Moriarty Arts and Humanities Building	2020
Cascade (CA)	PEB	Physical Education Building	2030
Cascade (CA)	PSEB	Public Service Education Building	2040
Cascade (CA)	PS	Public Safety	2050
Cascade (CA)	SC	Student Center & Library	2060
Cascade (CA)	SSB	Student Services Building	2070
Cascade (CA)	SU	Student Union	2075
Cascade (CA)	TEB	Technology Education Building	2080
Cascade (CA)	TH	Terrell Hall	2090
Cascade (CA)	KB	Kanjaya Building	2100
Cascade (CA)	PB	Paragon Club	2110
Cascade (CA)	UGP	Underground Parking	2120
Rock Creek (RC)	Campus	General Campus	3000GC
Rock Creek (RC)	B1	Building 1	3010
Rock Creek (RC)	B2	Building 2	3020
Rock Creek (RC)	B3	Building 3	3030
Rock Creek (RC)	B4	Building 4	3040
Rock Creek (RC)	B5	Building 5	3050
Rock Creek (RC)	B6	Building 6	3060
Rock Creek (RC)	B7	Building 7	3070
Rock Creek (RC)	B9	Building 9	3090
Rock Creek (RC)	KEN	Kennel	3110
Rock Creek (RC)		Care Takers Dwelling	None
Rock Creek (RC)		Farm Storage Building	None
Rock Creek (RC)		Farm Shop Building	None
Rock Creek (RC)		Farm Shop Building	None
Rock Creek (RC)		Barn	None
Rock Creek (RC)		New Shop Building	None
Rock Creek (RC)		Cattle Building	None
Rock Creek (RC)		Toilet Building	None
Rock Creek (RC)		Pole Building	None
Rock Creek (RC)		Green House	None
Rock Creek (RC)		Greenhouse (Hoops)	None
Southeast (SE)	Campus	General Campus	4000GC
Southeast (SE)	CHA	Community Hall Annex	4003
Southeast (SE)	LIBR	Learning Commons	4005
Southeast (SE)	MSH	Mount Scott Hall	4010
Southeast (SE)	MTH	Mount Tabor Hall	4020
Southeast (SE)	SAB	Southeast Administration Building	4030
Southeast (SE)	SCOM	Student Commons	4040
CLIMB	Campus	General Campus	5100GC
CLIMB	CLIMB	Continuous Learning for Individuals, Mgmt. & Bus.	5100
Downtown Center (DC)	Campus	General Campus	5200GC
Downtown Center (DC)	DC	Downtown Center	5200
Education Center (HTC)	Campus	General Campus	5300GC
Education Center (HTC)	ECB	Education Center Building	5300
Newberg Center (NB)	Campus	General Campus	5400GC
Newberg Center (NB)	NB	Newberg Center	5400
Portland Metro	Campus	General Campus	5500GC
Portland Metro	B1	Portland Metro Building 1	5500
Portland Metro	B2	Portland Metro Building 2	5510
Willow Creek (WC)	Campus	General Campus	5600GC

Willow Creek (WC)	WC	Willow Creek	5600
Swan Island (STC)	Campus	General Campus	5700GC
Swan Island (STC)	STC	Swan Island	5700
Central Dist. (CDSB)	Campus	General Campus	6000GC
Central Dist. (CDSB)	CDSB	Central Distribution Services Building	6010

7 APPENDIX B – REFERENCE MATERIAL

Campus Safety at Oregon Post-Secondary Education Institutions (2016)

PCC Technology Standards (2011)

Cascade Campus - Electronic Safety and Security Project Specifications (2012)

Cascade Campus - Electronic Safety and Security Project RFP (2012)

PCC Pima 2013 Community College Security Assessment

PCC Security Basis of Design (2013)

Basis of Design & Guidelines – Electronic Security & Door Hardware (2014)

PCC Campus NVR Assessment (2015)

RFP Specialty Contractor Services for District-wide Electronic Security Project (2015)

Security Infrastructure and Operational Requirements (2016)

District Wide Access Control Project Assessment for PCC (2016)

PCC Structured Cabling Standards v2-0 DEC16

RFI Distributed Antenna Systems 2016

Convergint Technologies Waves 8.1 Upgrade Phase 1 & 2 Proposal

PCC Issue Tracker – 2017-10-26

Physical Security Technician – Position Information/Job Description

FMS/DPS Technical Specialist Position – Job Description

Camera Master Inventory 7-10-17

DAS OOPC for PCC Campuses (2017)

District Panic Button Locations (2017)

Intrusion Zone Lists (2017)

First Response, Invoices for Service (2017)

ASG/AMAG Software Support Agreement (SSA) (2017)

ASG/Milestone Software Support Agreement (SSA) (2017)

Phase IV Design, Proposal, Headset Upgrades (2017)

ATIS, Proposal, VoIP Recording (2017)

Evans Consoles, Proposal, Control Consoles (2017)

PCC Analog Cameras District (2018)

8 APPENDIX C – PCC EACS CONFIGURATION DETAIL

The following EACS configuration totals are as of November 2017.

Sylvania:			
Building	Readers	Aux Outputs	Monitor Pts
AM	24	8	14
BK	7	3	4
CC	74	37	39
CSB	15	7	10
CT	37	2	5
HP	6	3	4
HT	3		
LIB	8	3	4
PAC	10	5	4
SS	27	8	11
ST	40	2	6
TCB	16	2	1
Total:	267	80	102

Cascade:			
Building	Readers	Aux Outputs	Monitor Pts
CH	24	5	3
DPS	2		
Gym	5		
JH	6		1
LIB	10	2	2
MAHB	7		2
Paragon	1		
PSEB	5		1
SSB	17	5	4
SU	13	3	7
TEB	7		
TH	10		
UG	4	4	
Surface Lot BDF Box			2
Total:	111	19	22

Rock Creek:			
Building	Readers	Aux Outputs	Monitor Pts
B1	10	2	5
B2	30	5	19
B3	23	2	15
B4	4	2	2
B5	17	4	4
B6	13	2	13
B7	26	4	5
B9	22	5	14
Total:	145	26	77

SouthEast:			
Building	Readers	Aux Outputs	Monitor Pts
Annex	9	10	3
Admin	8	4	
LIB	6		
MTS	3	2	1
MTT	22	2	17
SC	28	2	1
Surface Lot BDF Box			2
Annex Surface Lot BDF Box			2
Total:	76	20	26

CLIMB:			
Building	Readers	Aux Outputs	Monitor Pts
CLIMB	5	2	1

Downtown Center:			
Building	Readers	Aux Outputs	Monitor Pts
DC	33	12	3

PMWTC:			
Building	Readers	Aux Outputs	Monitor Pts
B1	7	2	3
B2	4	2	1
Total	11	4	4

Willow Creek:			
Building	Readers	Aux Outputs	Monitor Pts
WC	35	3	

Hillsboro Ed. Center:			
Building	Readers	Aux Outputs	Monitor Pts
HEC	6		

Newberg Center:			
Building	Readers	Aux Outputs	Monitor Pts
NC	9	5	2

Swan Island:			
Building	Readers	Aux Outputs	Monitor Pts
SI	7	3	4

9 APPENDIX D – LEGACY EACS LOCATIONS

Site	BLDG	RDR DOORS	NON-RDR DRS	Rollup DRS	DC Only DRS	Total
Cascade	CH	6	0	0	2	8
Cascade	DPS	2	0	0	0	2
Cascade	GYM	3	1	0	0	4
Cascade	JH	6	0	0	1	7
Cascade	LIB	9	0	0	2	11
Cascade	MAHB	7	0	0	2	9
Cascade	PARAGON	1	0	0	0	1
Cascade	PKB	0	0	0	2	2
Cascade	PSEB	5	0	0	1	6
Cascade	SSB	16	1	0	1	18
Cascade	SU	13	0	0	2	15
Cascade	TEB	7	0	0	0	7
Cascade	TH	8	2	0	0	10
Cascade	UG	1	0	0	0	1
Climb	Climb	4	0	0	0	4
Downtown Center	DC	33	0	0	0	33
Hillsboro Center	HC	6	0	0	0	6
Newberg Center	NC	9	0	0	0	9
Rock Creek	B1	10	0	2	2	14
Rock Creek	B5	17	0	0	2	19
Southeast	AB	8	0	0	0	8
Southeast	Annex	8	0	0	1	9
Southeast	LIB	6	0	0	0	6
Southeast	PKB	0	0	0	2	2
Southeast	SC	28	0	0	0	28
Swan Island	SI	7	0	0	4	11
Sylvania	CC	37	0	0	0	37
Sylvania	HT	3	0	0	0	3
Willow Creek	WC	35	0	0	0	35
Total		295	4	2	24	325

10 APPENDIX E – PCC IDS BUILDING LISTING

			ZONES					
NAME	**ACCOUNT**	**PANEL**	**EX**	**NT**	**PN**	**AR**	**SV**	**DY**
CA CH CASCADE	51-4000	DMP XR-100N	3	14	1	2	0	0
CA JH CASCADE	51-4008	DMP XR-100N	4	8	0	0	0	0
CA LIBRARY	51-4012	DMP XR-500N	3	3	0	2	0	0
CA MAH	51-4003	DMP XR-100N	4	7	1	0	1	0
CA PARAGON	51-4011	DMP XR-100N	3	1	0	0	0	0
CA PE GYM	51-4004	DMP XR-100N	4	2	0	0	0	0
CA PUBLIC SAFETY	51-4002	DMP XR 100N	2	6	0	0	0	0
CA PSEB	51-4007	DMP XR-100N	3	8	0	0	0	0
CA SSB	51-4006	DMP XR-500N	2	1	3	2	1	0
CA SU	51-4010	DMP XR-500N	2	10	5	2	0	0
CA TEB	51-4009	DMP XR-100N	5	17	0	0	1	0
CA TH	51-4001	DMP XR-100N	5	12	0	0	0	0
BONITA CDS	51-4076	DMP XR-100N	1	13	0	0	0	0
CLIMB	51-4061	DMP XR-500N	2	9	1	2	0	0
DOWNTOWN CENTER	51-4070	DMP XR-500N	7	29	3	4	0	0
METRO 1	51-4064	DMP XR-100N	9	5	1	2	0	0
METRO 2	51-4065	DMP XR-100N	2	8	0	2	0	0
NEWBERG	51-4073	DMP XR-500N	2	3	0	2	0	0
RC BLDG 1	51-4026	DMP XR-500N	3	11	0	2	0	0
RC BLDG 2	51-4027	DMP XR-100N	6	38	0	2	0	0
RC BLDG 3	51-4028	DMP XR-100N	3	40	0	2	0	0
RC BLDG 4	51-4029	DMP XR-100N	2	3	0	2	0	0
RC BLDG 5	51-4030	DMP XR-500N	7	25	2	2	0	0
RC BLDG 6	51-4031	DMP XR-100N	2	31	0	2	0	0
RC BLDG 7	51-4032	DMP XR-100N	14	15	0	4	0	0
RC BLDG 9	51-4033	DMP XR-100N	9	21	1	2	1	1
SE ADMIN	51-4019	DMP XR-500N	3	3	0	0	0	0
SE ANNEX	51-4020	DMP XR-500N	3	23	2	2	0	0
SE LIBRARY	51-4017	DMP XR-500N	5	10	0	0	0	0
SE MT SCOTT	51-4022	DMP XR-550	3	4	0	2	0	0
SE MT TABOR	51-4016	DMP XR-100N	7	46	1	2	1	0
SE SCOMM	51-4018	DMP XR-500N	3	9	8	2	0	0
SE GROUNDS SHED	51-4021	DMP XT-50	1	3	0	0	0	0
SWAN ISLAND	51-4077	DMP XR-500N	6	9	0	1	0	0
SY AM	51-4041	DMP XR-100N	1	39	0	2	0	0
SY BOOKSTORE	51-4053	DMP XR-100N	3	13	0	2	0	1
SY CC MAIN BLDG	51-4042	DMP XR-550	5	47	37	0	1	0
SY CC INFO TECH	51-4051	DMP XR-100N	2	3	0	0	2	0
SY CSB	51-4043	DMP XR-100N	8	17	0	2	0	0
SY CT	51-4044	DMP XR-100N	2	39	0	2	0	0
SY ENVIRONMENTAL	51-4048	DMP XR-550	0	0	0	0	2	0
SY HP	51-4054	DMP XR-100N	2	10	0	2	0	0
SY HT	51-4047	DMP XR-100N	2	6	0	0	0	0
SY LIBRARY	51-4045	DMP XR-100N	4	7	0	2	0	0
SY PAC	51-4052	DMP XR-100N	9	14	0	2	1	0
SY SS	51-4046	DMP XR-100N	2	36	6	4	0	0
SY ST	51-4049	DMP XR-100N	2	54	0	0	0	0
SY TCB	51-4050	DMP XR-100N	5	16	0	2	1	0
WILLOW CREEK	51-4067	DMP XR-500N	5	27	1	3	0	0

11 APPENDIX F – IDS INTEGRATION WITH AMAG EACS

NAME	AMAG Integration Yes	No
CA CH CASCADE		X
CA JH CASCADE		X
CA LIBRARY		X
CA MAH		X
CA PARAGON		X
CA PE GYM		X
CA PUBLIC SAFETY		X
CA PSEB		X
CA SSB		X
CA SU		X
CA TEB		X
CA TH		X
BONITA CDS		X
CLIMB	X	
DOWNTOWN CENTER	X	
METRO 1	X	
METRO 2	X	
NEWBERG	X	
RC BLDG 1		X
RC BLDG 2	X	
RC BLDG 3	X	
RC BLDG 4	X	
RC BLDG 5	X	
RC BLDG 6	X	
RC BLDG 7	X	
RC BLDG 9	X	
SE ADMIN		X
SE ANNEX		X
SE LIBRARY		X
SE MT SCOTT	X	
SE MT TABOR	X	
SE SCOMM		X
SE GROUNDS SHED		X
SWAN ISLAND		X
SY AM	X	
SY BOOKSTORE	X	
SY CC MAIN BLDG		X
SY CC INFO TECH		X
SY CSB	X	
SY CT	X	
SY ENVIRONMENTAL		X
SY HP	X	
SY HT		X
SY LIBRARY	X	
SY PAC	X	
SY SS	X	
SY ST	X	
SY TCB	X	
WILLOW CREEK	X	

12 APPENDIX G – DURESS REPORTING MATRIX

Sylvania Campus Panic Button Locations		Where alarm is received		
PB #	**Location**	**CSM**	**AMAG**	**BOEC**
1	CC 247 Admin	X	X	
2	CC Info Booth North	X		
3	CC Info Booth South			
4	CC Advising Check-in 1			
5	CC Advising Check-in 2			
6	CC Advising Check-in 3			
7	CC Counseling Check-in			
8	CC 208 Health admissions			
9	CC 209A Student Retention			
10	CC 209B Associate DOS			
11	CC 209H Advising			
12	CC 209J Advising			
13	CC 209K Counseling/Advising			
14	CC 209L Advising			
15	CC 209M Advising			
16	CC 209N Advising			
17	CC 209P Advising			
18	CC 210A Disability Services			
19	CC 210B Disability Services			
20	CC 210C Disability Services			
21	CC 210D Counseling			
22	CC 210E Counseling			
23	CC 210F Counseling			
24	CC 210G Counseling			
25	CC 210H Counseling			
26	CC 210J Counseling			
27	CC 210K Counseling			
28	CC 210L Counseling/Advising			
29	CC 210Y Counseling Assistant			
30	CC 202B Cash Count/Safe Room			
31	CC Student Accounts #5			
32	CC Student Accounts #6			
33	CC Student Accounts #7			
34	CC Student Accounts #8			
35	SS Business Admin Main Desk			
36	SS College Skills Main Desk 201			
37	SS Student Support Services 201D			
38	SS Student Support Services 201E			
39	SS Student Support Services 201F			
40	SS Student Support Services 201G			

Cascade Campus Panic Button Locations		Where alarm is received		
PB #	**Location**	**CSM**	**AMAG**	**BOEC**
1	MAHB Bookstore			
2	SSB Business Office			
3	SSB Business Office			
4	SSB Business Office			
5	SSB Business Office			
6	SSB Business Office			
7	SSB Advising			
8	SSB Advising			
9	SU Information Booth			
10	SU Cafeteria/Coffee Station			
11	SU Cafeteria/Coffee Station			
12	SU Cafeteria/Coffee Station			
13	SU Cafeteria/Cash Register			
14	CH Child Development Center			

Rock Creek Campus Panic Locations		Where alarm is received		
PB #	**Location**	**CSM**	**AMAG**	**BOEC**

1	Building 9, Business Office			
2	Building 9, Business Office			
3	Building 9, Business Office			
4	Building 9, Business Office			
5	Building 3, Cafeteria, Back Office			
6	Building 5, Book Store, Rm 141A			

SE Campus Panic Locations		**Where alarm is received**		
PB #	**Location**	**CSM**	**AMAG**	**BOEC**
1	SCOM			Z512 Textbook Drop
2	SCOM			Register 3
3	SCOM			Register 1
4	SCOM			Student Commons 113c
5	SCOM			Student Commons Information
6	SCOM			Student Commons Business Office #3
7	SCOM			Student Commons Business Office #1 and 2
8	SCOM			507 Window #1 and 2
9	SCOM			SE Student Commons Safe Room
10	Annex			SE Annex Child Care 12A
11	Annex			SE Annex Child Care 12B

CLIMB Panic Locations		**Where alarm is received**		
PB #	**Location**	**CSM**	**AMAG**	**BOEC**
12	CLIMB			Lobby

13 APPENDIX H – PCC ANALOG VIDEO SYSTEMS

Campus	Building	Server Type
CA	TEB	DM
CA	PSEB	DM
CA	GYM	DM
CA	Bookstore	DM
CA	MAHB	DM
CA	KILLCORR	DM
RC	9	DM
SE		INTEGRAL
SY	BOOKSTORE	INTEGRAL
SY	CSB	INTEGRAL
SY	HT	INTEGRAL
SY	HT	INTEGRAL
SY	LRC	DM

14 APPENDIX I – ANALOG CAMERA LOCATIONS

Site	Building	Location	Camera Type
CA	BK	West Wall	Fixed
CA	BK	NW Corner	Fixed
CA	BK	Warehouse	Fixed
CA	BK	Warehouse	Fixed
CA	BK	Sales Floor	Fixed
CA	BK	MAHB E/W Hallway	Fixed
CA	BK	SE Corner	Fixed
CA	BK	SE Corner	Fixed
CA	BK	Centered Ceiling	Fixed
CA	BK	S Wall	Fixed
CA	BK	Centered Ceiling	Fixed
CA	BK	N Wall	Fixed
CA	BK	NW Corner	Fixed
CA	BK	SW Corner	Fixed
CA	BK	Main Entrance	Fixed
CA	BK	Safe Room	Fixed
CA	GYM	N Stairs	Fixed
CA	GYM	2nd floor, S side	Fixed
CA	GYM	2nd FL Atrium	Fixed
CA	GYM	2nd FL Gym Entrance	Fixed
CA	GYM	Gymnasium SW Corner	Fixed
CA	GYM	Gymnasium SE Corner	Fixed
CA	GYM	Women's Locker Room	Fixed
CA	GYM	2nd FL, dance room	Fixed
CA	GYM	Main Entrance	Fixed
CA	GYM	W side parking lot	Fixed
CA	GYM	Men's Locker Room	Fixed
CA	GYM	Main Entrance	Fixed
CA	GYM	2nd FL Gym Interior	Fixed
CA	GYM	Exterior Main Entrance	Fixed
CA	GYM	Exterior S Wall	Fixed
CA	GYM	2nd FL Gym Interior	Fixed
CA	KILLCORR	Exterior SE Corner DPS Office	PTZ
CA	KILLCORR	SW Corner MAHB	PTZ
CA	KILLCORR	SW Corner MAHB	PTZ
CA	KILLCORR	SE Corner GYM	Fixed
CA	KILLCORR	NW Corner MAHB	PTZ
CA	KILLCORR	SW Corner Lot 3	PTZ
CA	KILLCORR	NW Corner MAHB	Fixed
CA	KILLCORR	SW Corner GYM	PTZ
CA	KILLCORR	SW Corner GYM	Fixed
CA	KILLCORR	SW Corner TEB	PTZ
CA	MAHB	SW Atrium	Fixed
CA	MAHB	E/W Hallway/1st FL	Fixed
CA	MAHB	E/W Hallway/1st FL	Fixed
CA	MAHB	E/W Hallway/1st FL	Fixed
CA	MAHB	E/W Hallway/2nd FL	Fixed
CA	MAHB	E/W Hallway/2nd FL	Fixed
CA	MAHB	E/W Hallway/2nd FL	Fixed
CA	MAHB	N/S Hallway/2nd FL	Fixed
CA	MAHB	N/S Hallway/1st FL	Fixed
CA	MAHB	N/S Hallway/1st FL	Fixed
CA	MAHB	N/S Hallway/2nd FL	Fixed
CA	MAHB	North Wall	Fixed
CA	MAHB	Exterior W Wall	Fixed
CA	MAHB	North Wall	Fixed
CA	MAHB	Exterior SW Corner	Fixed
CA	MAHB	Exterior SW Corner	Fixed
CA	PSEB	Fire Tower	Fixed
CA	PSEB	Unknown	Fixed
CA	PSEB	Main Entrance	Fixed
CA	PSEB	Dock Entrance	Fixed
CA	PSEB	N/S Hallway	Fixed
CA	PSEB	N Hallway	Fixed
CA	PSEB	Exterior SE Corner/Lot 5	PTZ
CA	PSEB	Exterior SW Corner/Lot 5	PTZ
CA	PSEB	W Hallway/E End	Fixed
CA	PSEB	W Hallway/W End	Fixed
CA	PSEB		
CA	PSEB		
CA	PSEB		
CA	PSEB		
CA	PSEB		
CA	PSEB		
CA	TEB	E Hallway/2nd FL	Fixed
CA	TEB	E Hallway/2nd FL	Fixed
CA	TEB	W Hallway/2nd FL	Fixed
CA	TEB	W Hallway/2nd FL	Fixed
CA	TEB	E Hallway/1st FL	Fixed

CA	TEB	E Hallway/1st FL	Fixed
CA	TEB	1st FL Elevator	Fixed
CA	TEB	Exterior NE Corner	PTZ
CA	TEB	N Hallway/2nd FL	Fixed
CA	TEB	N Hallway/2nd FL	Fixed
CA	TEB	N Hallway/1st FL	Fixed
CA	TEB	N Lobby/1st FL	Fixed
CA	TEB	N Hallway/1st FL	Fixed
CA	TEB	S Lobby/1st Floor	Fixed
CA	TEB	W Hallway/1st FL	Fixed
CA	TEB	W Hallway/1st FL	Fixed
RC	B9	Ceiling North stairs hallway centered	
RC	B9	Ceiling above reception desk North	Fixed
RC	B9	May be ceiling camera in front of RM S26	
RC	B9	May be ceiling camera in front of stair entrance door RM 202A	
RC	B9	Celling SW corner 202A	Fixed
RC	B9	Celling SW corner 202A	Fixed
RC	B9	Ceiling NW corner 202A	Fixed
RC	B9	Ceiling Southside RM 202B front of storage closets	Fixed
RC	B9	Ceiling near women's restroom	Fixed
RC	B9	Ceiling SE corner RM 202D	Fixed
RC	B9	Ceiling in hallway north of RM 209	Fixed
RC	B9	Ceiling behind reception desk	Fixed
RC	B9	Ceiling SW corner at top landing of stairs	Fixed
RC	B9	Ceiling NW corner 202B	Fixed
RC	B9	Ceiling West of RM 221	Fixed
RC	B9	Ceiling West of RM 221	Fixed
RC	B9	Northeast Ceiling RM 102	Fixed
RC	B9	UNK	UNK
RC	B9	Ceiling above station 2 RM 103A	Fixed
RC	B9	Ceiling above station 1 RM 103A	Fixed
RC	B9	Ceiling above station 4 RM 103A	Fixed
RC	B9	Ceiling above station 3 RM 103A	Fixed
RC	B9	Ceiling SE corner RM 103B	Fixed
RC	B9	Southeast ceiling RM 101	Fixed
RC	B9	Inside Storage RM S12	Fixed
RC	B9		
RC	B9		
RC	B9		
RC	B9		
RC	B9		
RC	B9		
RC	B9	Large Tube style Pelco. Exterior outside above West entrance doors.	Fixed
SE	Light Pole	Parking Lot A	Analog
SE	Light Pole	Parking Lot C	Analog
SE	Light Pole	Parking Lot C	Analog
SE	Light Pole	Parking Lot D	Analog
SE	MSH	1st floor east end hallway	Analog
SE	MSH	1st floor west hallway	Analog
SE	MSH	Northside exterior wall	Analog
SE	MTH	MTH east exterior wall	Analog
SE	MTH	MTH Great Hall Entry	Analog
SE	MTH	MTH South Entry	Analog
SE	MTH	MTH North Hall of Café	Analog
SE	MTH	MTH next to room 109	Analog
SE	MTH	MTH Next to room 120	Analog
SE	MTH	MTH South West Entry	Analog
SE	MTH	MTH South East Entry	Analog
SE	MTH	MTH above rm 123	Analog
SE	MTH	MTH above rm 124 /130	Analog
SE	MTH	MTH above rm 128 West entry	Analog
SE	MTH	MTH above rm 139	Analog
SE	MTH	MTH above rm 135 North Entry	Analog
SE	MTH	MTH above rm 132 FMS storage	Analog
SE	MTH	MTH Kiln Yard	Analog
SE	MTH	MTH Loading Dock	Analog
SE	MTH	MTH Out Door Quad	Analog
SE	MTH	MTH NE Exterior above rm 139	Analog
SY	BK	(10) 2nd Floor N. Racks	
SY	BK	(11) 1st Floor Elevator/Receiving	
SY	BK	(13) 2nd Floor Book Buy Back Window	

SY	BK	(14) 1st Floor Loading Rollup Doors	
SY	BK	(15) 2nd Floor Main Entry	
SY	BK	(16) Elevator?	
SY	BK	(3) 2nd Floor E.	
SY	BK	(4) 2nd Floor W.	
SY	BK	(5) 2nd Floor E./Center Cash Register	
SY	BK	(6) 2nd Floor W./Center Cash Register	
SY	BK	(7) 3rd Floor N. Computer Display	
SY	BK	(8) 2nd Floor W. Double Cash Register	
SY	BK	(9) 2nd Floor Safe Room	
SY	CSB	1st Floor Elevator Grounds	
SY	CSB	2nd Floor Elevator/FMS	
SY	CSB	2nd Floor Loading Dock	
SY	CSB	2nd Floor Warehouse Door	
SY	CSB	3rd Floor Main Elevator	
SY	CSB	3rd Floor Main Entrance	
SY	CSB	DPS Aux Entrance	
SY	CSB	DPS Main Entrance	
SY	CSB	Grounds Service Yard PTZ	
SY	CSB	NE Rooftop PTZ	
SY	CSB	NW Rooftop PTZ	
SY	HT	Basement Loading Dock	
SY	HT	Basement Hallway/HT 02	
SY	HT	1st Floor PE East Hallway	
SY	HT	1st Floor PE West Hallway	
SY	HT	Men's Locker Room Entrance	
SY	HT	1st Floor Commons/Rm. 101	
SY	HT	1st Floor N. Main Entry	
SY	HT	1st Floor Dive Pool	
SY	HT	1st Floor W. Pool Ext.	
SY	HT	2nd Floor N. Main Entry	
SY	HT	3rd Floor S. Main Entry	
SY	HT	Large CSD Playground	
SY	HT	Small Playground	
SY	HT	Child Car E. Entrance	
SY	HT	Child Car N. Entrance	
SY	HT	2nd Floor S. Main Entry	
SY	HT	Dental Office Reception	
SY	HT	3rd Floor Main Entry	
SY	HT	3rd Floor S. Ext. PTZ	
SY	HT	3rd Floor Interior PTZ	

15 APPENDIX J – EMERGENCY BLUE-LIGHT PHONE LOCATIONS

Campus/Location	Display Name
Cascade	Code Blue CA PE PLot
Cascade	Code Blue CA PS PLot
Cascade	Code Blue CA N PLot
Cascade	Code Blue CA SS PLot
Cascade	Code Blue CA JH PLot
Cascade	Code Blue CA PLot 6
Cascade	Code Blue CA PLot 7
Cascade	Code Blue CA UG S
Cascade	Code Blue CA UG SE
Cascade	Code Blue CA UG SW
Cascade	Code Blue CA UG NE
Cascade	Code Blue CA UG NW
Cascade	Code Blue CA SU Plaza
Cascade	Code Blue CA SU South
CLIMB	Code Blue CLIMB
Newberg	N/A
Rock Creek	Code Blue RC PLot A
Rock Creek	Code Blue RC PLot C
Rock Creek	Code Blue RC 1
Rock Creek	Code Blue RC 5 Walkway
Rock Creek	Code Blue RC 7 Walkway
Southeast	Code Blue SE PLot C
Southeast	Code Blue SE S Courtyard
Southeast	Code Blue SE PLot D
Southeast	Code Blue SE LI
Southeast	Code Blue SE PLot B
Southeast	Code Blue SE PLot E
Southeast	Code Blue E PLot F
Swan Island	Code Blue STC
Sylvania	Code Blue SY PLot 7
Sylvania	Code Blue SY PLot 10
Sylvania	Code Blue SY PLot 1
Sylvania	Code Blue SY PLot 14

16 APPENDIX K – PCC SAFETY AND SECURITY PLAN SUMMARY

Safety and Security Plan Summary

Priority Key

	Critical Need
	Important Need
	Needed

Phase 1 - Enabling Phase			**Budget Cost**
1	5.1.1.1	Electronic Public Safety System Program Manager	TBD
2	5.1.2.1	Electronic Public Safety System Administrator Position	TBD
3	5.1.3	Electronic Public Safety System Standards Development	$70,000.00
4	5.1.4	Risk Analysis for Mass Notification Systems	$50,000.00
	5.1.5	Future CEPTED Analysis	$80,000.00

Phase 2 - Stabilization Phase

Electronic Access Control System (EACS)

1	5.2.1.1	Legacy Access Reconfiguration	$927,000.00
2	52.1.2	Integrate Overhead Doors for Lockdown (Design)	$15,000.00

Intrusion Detection Systems (IDS)

1	5.2.2.1	Update Intrusion Detection System Zone Information	$30,000.00
2	5.2.2.2	Intrusion Detection/AMAG Integration Reconfiguration	$240,000.00
3	5.2.2.3	Duress/Panic System Reconfiguration	$58,000.00
4	5.2.2.4	Install New Duress Panic Buttons	$72,000.00

Video Surveillance and Recording System (VSRS)

1	5.2.3.1	Upgrade Analog Cameras and Systems	$841,000.00
2	5.2.3.2	Balance Video Loads on Servers	$87,000.00

Mass Notification System (MNS)

1	5.2.4.1	Eaton Waves Alternatives	$850,000.00
2	5.2.4.2	Optimize Rave Mass Notification	N/A

Emergency Communications System (ECS)

1		None

Phase 3 - Expansion Phase

Electronic Access Control System (EACS)

1	5.3.1.1	Add Intergation Between EACS and VSRS	$20,000.00

Intrusion Detection Systems (IDS)

1	5.3.2.1	Install New Duress Panic Buttons	$72,000.00

Video Surveillance and Recording System (VSRS)

1	5.3.3.1	Add Cameras at Duress/Panic Button Locations	$259,400.00

Mass Notification System (MNS)

1		None

Emergency Communications System (ECS)

1	5.3.5.1	Study - Transition From Blue-light Phones	$25,000.00

17 APPENDIX L – EACS RECONFIGURATION DETAIL

LEGACY ACCESS RECONFIGURATION

	Cascade	CLIMB	Downtown	Hillsboro
Site analysis and scope development	$10,000.00	$5,000.00	$10,000.00	$5,000.00
Project design docs	$25,000.00	$14,000.00	$90,000.00	$14,000.00
Installation	$150,000.00	$20,000.00	$75,000.00	$20,000.00
Project close-out docs	$7,000.00	$3,000.00	$5,000.00	$3,000.00
TOTAL	**$192,000.00**	**$42,000.00**	**$180,000.00**	**$42,000.00**

LEGACY ACCESS RECONFIGURATION

	Newberg	Rock Creek	Southeast	Swan Island
Site analysis and scope development	$5,000.00	$5,000.00	$10,000.00	$5,000.00
Project design docs	$10,000.00	$13,000.00	$13,000.00	$10,000.00
Installation	$27,000.00	$55,000.00	$80,000.00	$22,000.00
Project close-out docs	$5,000.00	$7,000.00	$7,000.00	$5,000.00
TOTAL	**$47,000.00**	**$80,000.00**	**$110,000.00**	**$42,000.00**

LEGACY ACCESS RECONFIGURATION

	Sylvania	Willow Creek
Site analysis and scope development	$7,000.00	$7,000.00
Project design docs	$15,000.00	$15,000.00
Installation	$75,000.00	$63,000.00
Project close-out docs	$5,000.00	$5,000.00
TOTAL	**$102,000.00**	**$90,000.00**

18 APPENDIX M – IDS/AMAG RECONFIGURATION BY BUILDING

BUILDING NAME	Budget
CA CH CASCADE	$10,000.00
CA JH CASCADE	$10,000.00
CA LIBRARY	$10,000.00
CA MAH	$10,000.00
CA PARAGON	$10,000.00
CA PE GYM	$10,000.00
CA PUBLIC SAFETY	$10,000.00
CA PSEB	$10,000.00
CA SSB	$10,000.00
CA SU	$10,000.00
CA TEB	$10,000.00
CA TH	$10,000.00
BONITA CDS	$10,000.00
RC BLDG 1	$10,000.00
SE ADMIN	$10,000.00
SE ANNEX	$10,000.00
SE LIBRARY	$10,000.00
SE SCOMM	$10,000.00
SE GROUNDS SHED	$10,000.00
SWAN ISLAND	$10,000.00
SY CC MAIN BLDG	$10,000.00
SY CC INFO TECH	$10,000.00
SY ENVIRONMENTAL	$10,000.00
SY HT	$10,000.00
TOTAL	**$240,000.00**

19 APPENDIX N – DURESS SYSTEM RECONFIGURATION DETAIL

	DURESS/PANIC RECONFIGURATION			
	Cascade	**Rock Creek**	**Southeast**	**Sylvania**
Site analysis and scope development	$2,000.00	$2,000.00	$2,000.00	$2,000.00
Project design docs	$3,000.00	$3,000.00	$3,000.00	$3,000.00
Reconfiguration	$7,000.00	$5,000.00	$4,000.00	$10,000.00
Test and acceptance	$1,000.00	$1,000.00	$1,000.00	$1,000.00
Project close-out docs	$2,000.00	$2,000.00	$2,000.00	$2,000.00
TOTAL	**$15,000.00**	**$13,000.00**	**$12,000.00**	**$18,000.00**

20 APPENDIX O – DURESS/PANIC ADDITION DETAIL

ADD DURESS/PANIC ADDITIONS	Metro	Swan Island	Willow Creek
Site analysis and scope development	$2,000.00	$2,000.00	$2,000.00
Project design docs	$3,000.00	$3,000.00	$3,000.00
Duress/Panic Install	$5,000.00	$5,000.00	$5,000.00
Test and acceptance	$1,000.00	$1,000.00	$1,000.00
Project close-out docs	$1,000.00	$1,000.00	$1,000.00
TOTAL	**$12,000.00**	**$12,000.00**	**$12,000.00**

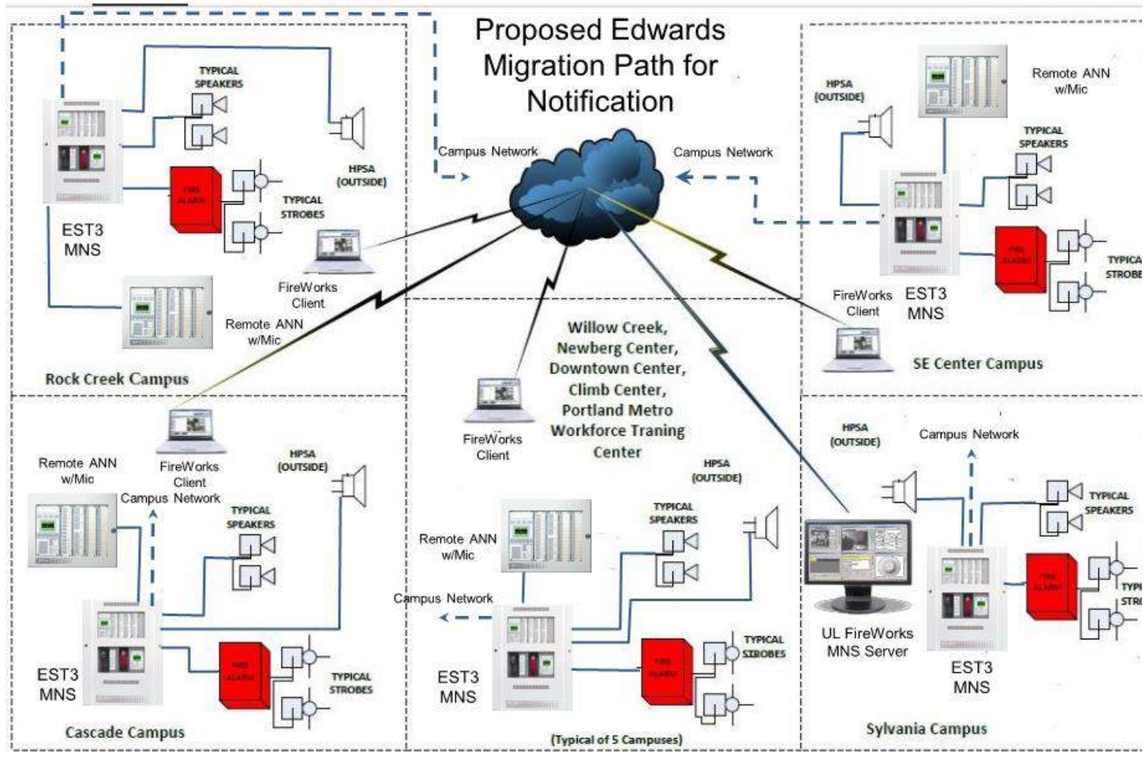
ADD DURESS/PANIC ADDITIONS	CLIMB	Newberg	Downtown Ctr
Site analysis and scope development	$2,000.00	$2,000.00	$2,000.00
Project design docs	$3,000.00	$3,000.00	$3,000.00
Duress/Panic Install	$5,000.00	$5,000.00	$5,000.00
Test and acceptance	$1,000.00	$1,000.00	$1,000.00
Project close-out docs	$1,000.00	$1,000.00	$1,000.00
TOTAL	**$12,000.00**	**$12,000.00**	**$12,000.00**

*NOTE: Assumes two (2) duress/panic locations per facility.

21 APPENDIX P –ANALOG CAMERA UPGRADE DETAIL

	Upgrade Legacy Analog Cameras			
	Cascade	**Rock Creek**	**Southeast**	**Sylvania**
Site analysis and scope development	$4,000.00	$4,000.00	$4,000.00	$4,000.00
Project design docs	$27,000.00	$18,000.00	$14,000.00	$18,000.00
Installation	$270,000.00	$155,000.00	$115,000.00	$185,000.00
Project close-out docs	$7,000.00	$6,000.00	$4,000.00	$6,000.00
TOTAL	**$308,000.00**	**$183,000.00**	**$137,000.00**	**$213,000.00**

22 APPENDIX Q – EDWARDS EST/FIREWORKS MIGRATION DIAGRAM



23 APPENDIX R – DURESS CAMERA DETAIL

	Add Cameras at Duress/Panic Buttons		
	Cascade	**Southeast**	**Sylvania**
Site analysis and scope development	$1,000.00	$2,500.00	$3,500.00
Project design docs	$2,500.00	$5,500.00	$10,000.00
Installation	$8,200.00	$49,200.00	$164,000.00
Project close-out docs	$1,000.00	$5,000.00	$7,000.00
TOTAL	**$12,700.00**	**$62,200.00**	**$184,500.00**