

PORTLAND COMMUNITY COLLEGE CAMPUS TREE CARE PLAN
2015

1. PURPOSE

The purpose of the Portland Community College campus tree care plan is to identify the procedures, and practices that are used in establishing, protecting, maintaining, and removing trees on the Portland Community College campuses. Campuses within the City of Portland's jurisdiction will also comply with Title 11 Tree Codes as mandated. The overall goal of the plan is to ensure a safe, attractive, and sustainable campus urban forest. The specific objectives of the plan are:

- Ensure proper species selection, high-quality nursery stock acquisition, and industry consensus planting procedures
- Promote species diversity and proper age structure in the tree population
- Protect high value campus trees during construction and renovation projects
- Promote tree health and safety by utilizing ISA's and City of Portland's Title 11 best management practices when maintaining campus trees
- Ensure that trees are reasonably replaced when there is mortality due to weather, pest infestations, injury, or construction displacement
- Encourage campus community members to respect and value the campus urban forest
- Filtering storm water and reducing storm water runoff and maintain slope stability and prevent erosion.
- Reducing energy demand and urban heat island through shading of buildings and impervious areas.
- Sustaining habitat for birds and other wildlife and provide a source of food for wildlife and people.

Note: This plan has been promulgated in partial fulfillment of Arbor Day Foundation's standards for Tree Campus USA designation and does not reflect official College policy on all matters. However, many of these policies, procedures, and practices are currently in place and administered.

2. RESPONSIBLE DEPARTMENT

Portland Community College Grounds Department located within the Facilities Management Services Department is responsible for care and maintenance of all trees on campus, excluding the Environmental Learning Forest at Rock Creek campus, and the woods at Sylvania campus.

3. DISTRICT CAMPUS TREE ADVISORY COMMITTEE

The tree advisory committee is formally known as the District Campus Tree Committee. The committee is comprised of faculty and staff from Landscape, Environmental, and Biology related programs throughout the college. The committee meets biannually, and provides important input in to care and improvement of the campus landscape and urban forest.

4. CAMPUS ARBORICULTURE PRACTICES

I. Pruning Schedule Guidelines

The maintenance pruning schedule shall be dictated by tree species, age, function, and placement.

- Trees less than 7 years old should receive structural pruning on an annual or biennial basis

- Trees 7-20 years old should receive structural pruning every two to five years
- Trees 20 years old and older receive maintenance pruning every five to seven years to clean dead, diseased, dying, and defective branches from the crown
- Trees adjacent to roadways, walkways, signs, and street lights are annually inspected for safety and clearance issues and maintenance pruned as necessary
- Trees in the wooded natural areas are only maintained for safety to the public

II. Pruning Practices

To encourage the development of a strong, healthy tree, City of Portland's Title 11, ANSI A300 and Z133 standards, and the following guidelines shall be followed when pruning.

General

- Pruning shall not be conducted without a clear objective or outcome
- Prune first for safety, next for tree health, and finally for aesthetics
- When removing branches, the pruning cut shall not damage the branch bark ridge and branch collar
- Internode (heading) cuts should not be used except in storm response and crown restoration procedures
- Branch reduction or thinning should be used to achieve pruning objectives rather than making large (>8" diameter) branch removal cuts □ Building clearance of 24" shall be maintained.

Cleaning

- Thinning shall be performed to remove dead, diseased, dying, and defective branches, which reduces hazards, promotes health, and improves appearance
- Large branches should be removed with the aid of ropes and rigging equipment to minimize the risk of tree injury from falling debris

Thinning

- Thinning shall be performed to reduce the density of branches, which increases light penetration, improves visibility, and decreases wind load
- Assess how a tree will be pruned from the top down
- Favor branches with strong U shaped angles of attachment. Remove branches with weak, V shaped angles of attachment and/or included bark
- Ideally, lateral branches should be evenly spaced on the main stem of young trees
- Remove any branches that rub or cross another branch
- Make sure that lateral branches are no more than one-half to three-quarters of the diameter of the main stem to discourage the development of co-dominant stems
- Do not remove more than one-quarter of the living crown of a tree at one time. If it is necessary to remove more, do it over successive years.
- Thinning should be done in the summer months when plants are fully in leaf.

Raising

- Raising shall be performed to provide vertical clearance from thoroughfares, signs, street lights, and structures
- Always maintain live branches on at least two-thirds of a tree's total height. Removing too many lower branches will hinder the development of a strong main stem
- Remove basal sprouts and vigorous epicormics sprouts, after reviewing sun scald risk, as additional precautions may be required.

Reduction

- Reduction shall be performed to decrease the overall height of a tree or to decrease the length of an individual branch
- Use reduction pruning only when absolutely necessary. Make the pruning cut at a lateral branch that is at least one-third the diameter of the stem to be removed.
- If it is necessary to remove more than a half of the foliage from a branch, remove the entire branch.

III. Cultural Practices

Mulching and Irrigation

Trees should receive at least a 2" layer of mulch when planted. All trees in turf areas should have at least a 3 foot diameter mulch circle to protect the trunk from mower damage. The tree mulch circle should be kept weed free and fresh mulch applied as necessary. Newly planted trees should be irrigated for the first two to three years or until established.

Fertilization and Pest Management

Trees are treated for pest problems as needed, within the guidelines of our current IPM plan. Fertilization requirements will be determined on a case by case basis, using IPM and sustainability standards. Where the tree is noted to be of a special importance, use a soil test to determine full remediation requirements.

IV. Other Practices Tree

Removals

- Live trees are generally removed only when required to protect the public safety or are detracting from the quality of the landscape, and will include clearance for safety, lighting, security cameras, IPM requirements, structure protection, and disease.
- Removals will keep within the standards of City of Portland's Title 11, and FMS will determine the needs for tree removal and a record of each tree removed will be kept for the Tree Committee to review.
- Where the committee cannot reach a consensus an independent assessment by a qualified arborist may be required and submitted to the committee for review.

Planting and Tree Diversity

- On the campuses that are used as a teaching lab, increasing the diversity of tree species is extremely important. However, species selection must be dictated by site conditions.

- A 'species list' for each campus does not exist. Campus Tree Committee members should produce a recommended species list for specific site conditions. Committee members often request use of new cultivars and species that are absent or under represented on campus to assist in their teaching activities. Based on the vernacular of the site, some landscapes will be planted in native species while others may include exotics. Known invasive woody plants are consciously avoided in tree planting plans. Where possible, trees should be on their own roots to avoid graft incompatibility issues. See Appendix I for Rock Creek campus.

Storm Response and Recovery

Storm response and recovery are generally accomplished in-house. In a crisis, the first priority is to remove tree debris that blocks campus thoroughfares, disrupts campus operations, or poses hazards to the campus community. Once these critical needs are addressed, a prioritized recovery plan is implemented during which unsalvageable trees are systematically removed and salvageable trees are pruned to restore their health and structure. As the tree planting budget permits, lost trees are strategically replaced to restore the structure and function of the campus urban forest in a reasonable time frame. During storm response and recovery, trees requiring specialized equipment not available in-house are addressed by outside contractors.

5. PROTECTION AND PRESERVATION PROCEDURES

I. Preservation During Design Phase – Follow Tree Protection Division 1 Bond Standards

- a. On the site survey map, identify all trees whose root systems are likely to be impacted by construction equipment, cut and fill activities, utility corridors, proposed walks and roads, and potential construction staging areas; and whose branches may be damaged by construction equipment.

If trees are grouped in a forest or woodlot, then only the location of the woodlot and any trees greater than 24 inches dbh need to be identified.

1. Not salvageable

- a. All trees that are within the footprint or in close proximity to the footprint of a proposed building. (Alternative footprints to save large, valuable trees should be considered, provided that the alternatives maintain the desired features and costs of the proposed building.)
- b. Trees of undesirable species or in very poor health. Examples include, but are not limited to species that have low landscape and educational value, and heavily diseased or damaged trees that have little chance of recovering desirable form and function, even if protected from construction damage.

2. Low priority for protecting

- a. Small native trees less than 6" dbh that fall outside of the building footprint, but are likely to be impacted by construction activities.
- b. Larger trees outside of the building footprint with relatively low landscape value. Examples include but are not limited to trees with poor form, species of relatively low landscape and educational value, or trees with inadequate space to accommodate current or future growth even if the site is ameliorated. See Appendix I for Rock Creek.

3. High priority for protecting

- a. Medium (> than 6" dbh) to large (> than 24" dbh) trees of desirable species with good form, good health, and room to continue to grow.
- II. Avoid locating the general construction site around low and high priority trees where possible by:
 - A. Planning all construction activities including new utility corridors, staging areas, new sidewalks and new roads for a minimum clearance of 15 feet away from the base of trees, and not within the edge of the canopy drip line. Greater distances are desirable.
 - B. High priority trees should receive more consideration than low priority trees in planning corridors, staging areas, walks, and roads.
 - C. Strictly follow Division 1 Tree Protection guidelines.

6. GOALS AND TARGETS

Tree Inventory

A digital tree inventory covering the District campuses and centers will be developed. When the data is placed on a web based server, updated information from Bond or other capital construction work will be provided by the College Landscape Architect, and given to the Grounds Manager, or designated personnel. The inventory may be used for campus planning purposes, tree management, academic exercise (read only access), and the general public (read only access).

Tree Canopy and Campus Master Plan

- See attachment two at the end of this document
- Increasing the campus tree canopy is an important component of the Climate Action Plan goals.
- All trees have some value. Our goal is to increase storm water interception, decrease storm water runoff, increase carbon sequestration, reduce energy demands and urban heat islands, and sustain wildlife habitat.

7. TREE DAMAGE ASSESSMENT, ENFORCEMENT, AND PENALTIES

Assessment of low profile damage to trees will be determined by FMS, and if disagreement occurs, an outside consultant will be asked to assess. Division 1 Tree Protection standards are to be followed at all times. If construction or field design changes are necessary, at least one week notification is to be given to allow an assessment to take place to resolve and accommodate changes.

8. PROHIBITED PRACTICES

Destruction of Trees (insert county/city ordinance)

Topping of Trees

Heading, hat-racking, or any other form of inappropriate crown/branch reduction pruning shall not be permitted except in emergency situations or in executing a crown restoration procedure. Pruning shall be done according to ANSI A300 and Z133 standards as well as City of Portland Title 11.

9. COMMUNICATION STRATEGY

Currently, the tree protection guidelines listed in attachment one are communicated to project managers for inclusion in project specifications. The tree preservation categorizing process is used by the College Landscape Architect for building siting and campus master planning.

Upon official adoption, the plan will be placed on the web with links from the tree inventory, College Landscape Architect office, and Planning, Design, and Construction web sites.

ATTACHMENT ONE

(Excerpted from design guidelines provided on all construction projects)

TREE AND PLANT PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes requirements for protection of trees, plants and groundcovers to remain and prevent damage above and below grade, including temporary fencing. 1.2 DEFINITIONS

A. Drip Line: Outer perimeter of branches of any tree or plant.

B. Protection Zone: 5 feet beyond the dripline of any tree or plant.

C. Ground Cover: Includes, but is not limited to, shrubs and grass.

1.3 SUBMITTALS

A. Submit the following in accordance with Division 1 Section "Submittal Procedures".

1. Written proposal for tree and plant protection, describing methods of protection and stabilization.

2. Drawings and supporting documentation as directed.

1.4 QUALITY ASSURANCE

A. Contractor's Condition Inspection: Include written report and digital photographs recording the condition of the site prior to commencing construction.

B. The Owner shall retain a Consulting Arborist registered with the American Society of Consulting Arborists at the Owner's expense. Contractor shall notify the Architect and Owner of all issues related to tree protection as they arise, and the Contractor shall comply with Arborist's recommendations for tree protection and continued tree health when work occurs within the root zones of trees scheduled to remain.

1.5 PROJECT CONDITIONS

A. Performance Requirements: Prevent damage to trees and plants including soil, roots, bark, trunks, limbs, branches, and foliage due to construction activities including, but not limited to, the following:

1. Soil contamination, erosion and compaction.

2. Excessive wetting, ponding of stormwater, and construction run-off.

3. Alteration of grade and stockpiling of soil, debris, and materials.

4. Unauthorized cutting, breaking, skinning, and bruising of trees and plants.

B. Project Conditions: Install protection during initial mobilization at the site and maintain until Substantial Completion.

1. Driving and Parking: Not permitted within protection zone of trees, plants and sensitive natural areas or lawn without Architect's written permission.

2. Storage of Material and Debris: Not permitted within protection zone of trees and plants. 3. Where Architect permits construction traffic, parking or materials storage on prepared lawn and planting areas, provide planks, plywood and similar protection; prevent rutting and compaction of soil.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 EXISTING TREES AND PLANTS

- A. Verification of Conditions: Inspect trees, plants and groundcovers, and document existing conditions with digital photographs prior to installation of protective fencing and again after site clearing has been completed. Provide digital photographs to Architect for review within 24 hours of taking photos.
- B. Tree Protection Zones: The Contractor shall exercise the utmost care to protect existing trees and plants designated to remain. The Contractor shall install tree protection fencing at existing trees indicated to remain. Fencing shall be chainlink, 6-high panels.
- C. Water trees and plants as necessary to maintain existing condition throughout Contract period until Substantial Completion.
- D. Review conditions with Consulting Arborist and Architect prior to pruning or cutting roots, branches and foliage, and proceed as directed. Perform pruning and cutting with sharp instruments intended for the purpose; do not break nor chop.
- E. Excavating and Trenching within Driplines: Permitted where indicated and at other specifically approved locations. Provide additional protection as recommended by the Consulting Arborist at no additional cost to the Owner. Tunnel under or around roots with an air spade, by hand digging, or by boring. Do not cut main lateral roots and tap roots over 1-inch in diameter, cut smaller roots which interfere with installation of new work.
- F. Do not allow exposed roots to be scarred nor to dry out; provide temporary earth cover, or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage.
- G. Maintain existing grades within protection zones of trees and plants unless otherwise indicated or approved by Architect.
- H. Provide construction fences around trees to prevent damage. Fencing shall be placed at least 5 feet beyond dripline unless otherwise directed by Consulting Arborist or Architect to prevent compaction of soil over roots. Prevent entry into protected areas except as authorized in writing by the Owner's landscape maintenance personnel.
 - 1. 6- to 8-inches of hog fuel shall be placed within the tree protection zone where the Consulting Arborist or Architect determines that there is a risk of soil compaction.
- I. Shrubs and small trees shall be fenced from the construction site.
- J. All construction debris shall be removed from shrub beds and landscape areas.

3.2 REPAIR AND RESTORATION

- A. All damage to turf, shrubs, and trees will be the Contractor's responsibility to repair or replace under the direction of the Architect, with like plant material and size or pay restitution if replacement plans are unavailable. Make repairs promptly after damage occurs to prevent progressive deterioration.
- B. Replace trees and plants damaged by construction operations where the Architect determines restoration to normal growth pattern is not possible. Plant and maintain as directed.
 - 1. Trees up to 13-inch caliper: Same size as damaged tree; species selected by Architect.
 - 2. Trees over 13-inch caliper: Compensate Owner as determined by an acceptable Consulting Arborist registered with the American Society of Consulting Arborists.
 - 3. Plants: Same size, quality, and quantity as damaged; species selected by Architect.
- C. Where compaction of soil due to construction activity, including compaction of soil due to elevated water content, exceeds the critically limiting bulk density for the soil type in question,

the Contractor shall provide measures as directed to reduce soil bulk density to acceptable levels to support normal plant growth.

END OF SECTION

ATTACHMENT TWO

The Rock Creek Environmental Studies Center (RCESC) is a natural area within Portland Community College's Rock Creek Campus that is considered to be an important natural history area by both the Portland Audubon Society and the Oregon Department of Fish and Wildlife.

The natural area, which comprises the RCESC, includes about 44 acres of woodland, 11 acres of wetland and 44 acres of grasslands. Several smaller unique ecosystems are also present in this site, including several springs and a small pond ecosystem.

There are two sections of Douglas-fir dominated forests, which also include species of trees such as Western hemlock, Western Redcedar, Pacific yew, and Bigleaf maple; in addition to a wide variety of shrubs and plants. The site also contains some bottomland forested areas which include Red alder, Oregon white oak, Beaked hazelnut, and others. Several wetland plant communities and a large grassland area also occur within the RCESC. These areas provides habitat for several groups of wildlife including nesting areas for waterfowl, quail, pheasants and song birds; as well as being homes to mammals such as deer, beaver, muskrat, mink, raccoon, fox and coyote.

APPENDIX I

Groups served by the RCESC

The RCESC serves three major groups:

- PCC's Environmental Studies, Biology and Landscape Technology students are fortunate to have an extremely diverse living laboratory to observe and study within the campus boundaries.
- Local colleges and universities, high schools, and grade schools take advantage of RCESC for related field courses. Groups of five or more should contact us.
- Citizen groups visit for nature hikes and volunteer in habitat restoration projects.

HABITATS

1. Upland Forest

The area that is an upland forest has a closed canopy forest dominated by *Pseudotsuga menziesii* (Douglas fir), the most common conifer and *Acer macrophyllum* (big leaf maple) the most common deciduous tree. The area has been logged, the current tree cover being second growth.

2. Wet Meadow

The wet meadow at RCESC is dominated by grasses and inter-mixed rushes and sedges. The area is adjacent to bottomland forest and emergent wetlands.

3. Bottomland Forest

This forest is dominated by red alder, Oregon ash, and Scouler's willow as well as several species of shrubs (e.g. cascara, Douglas hawthorn, Pacific ninebark). The area has saturated soil for much of the spring and into the summer.

4. Emergent Wetland

The emergent marsh is fourteen acres and receives water from Rock Creek during high flows and from adjacent springs. The vegetation is dominated by reed canary grass, bentgrass and tall fescue as well as several species of rushes and sedges.

5. Riparian

A channel associated with Rock Creek flows on the northwest side of the property. The banks of the channel are wet meadow and the soil is hydric. The stream is utilized by various waterfowl, and several species of fish.

6. Open Field

The grasslands within RCEC are a mix of upland and wet meadow. They are important habitats for small mammals and for grazing ungulates (e.g. black tailed deer).

Trail Maps: <http://www.pcc.edu/resources/rcesc/habitat/trails.html>