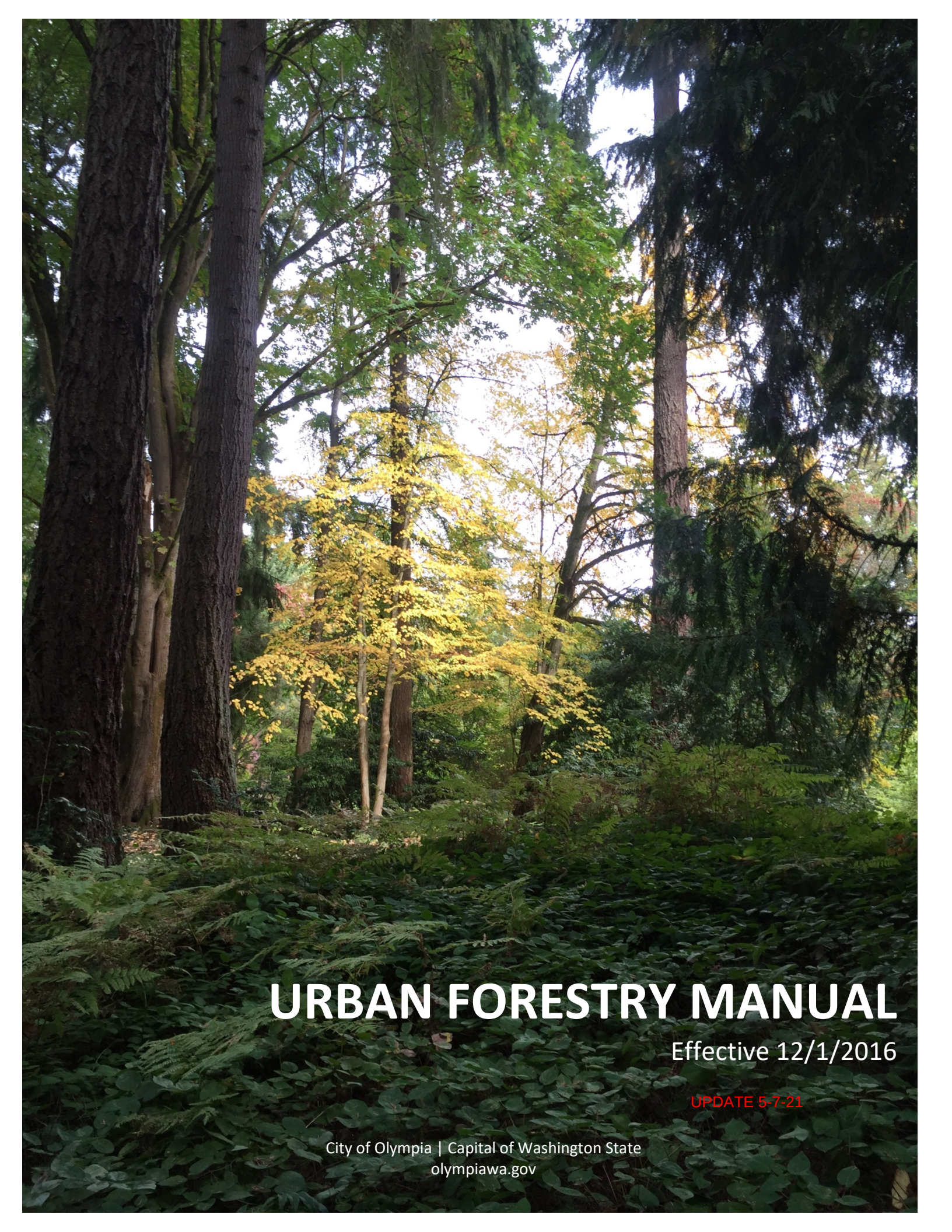




# URBAN FORESTRY MANUAL

Effective 12/1/2016

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City of Olympia | Capital of Washington State  
[olympiawa.gov](http://olympiawa.gov)

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# Chapter 1

## Introduction

The Urban Forestry Manual (Manual) is a technical guide to identifying, preserving, enhancing, and ongoing stewardship of Soil and Vegetation Protection Areas (SVPAs). SVPAs are required for new development and redevelopment in the City of Olympia per Olympia’s Municipal Code (OMC) 16.60 - Tree, Soil, and Native Vegetation Protection and Replacement.

While the Manual includes many of the standards and requirements for SVPAs and the retention, protection, and maintenance of individual trees, it shall be used concurrently with the following OMC Chapters and adopted manuals and standards to ensure all soil, vegetation, and tree preservation, installation, and maintenance requirements are met:

- OMC 16.56 - Landmark Tree Protection;
- OMC 16.58 - Public Trees;
- OMC 16.60 - Tree, Soil, and Native Vegetation Protection and Replacement;
- OMC 18.36 - Landscaping and Screening;
- OMC 13.16.017 - Drainage Design and Erosion Control Manual; and
- The Engineering Design and Development Standards

The standards in this Manual are based on current Best Management Practices (BMPs)—widely accepted practices and standards used by industry professionals and based on the best available research. The City’s Urban Forester periodically reviews and revises the BMPs as necessary.

### 1.1 Intent

The City of Olympia’s Comprehensive Plan includes a vision for Olympia as a community with “a beautiful, natural setting that is preserved and enhanced.” Goals in the Natural Environment Chapter outline an Olympia in twenty years where land is preserved and sustainability managed; a healthy and diverse urban forest is protected, expanded, and valued for its contribution to the environment and community; and the waters and natural processes of Budd Inlet and other marine waters are protected from degrading impacts and significantly improved through upland and shoreline preservation and restoration.

To accomplish this vision, the City of Olympia Municipal Code has for decades required the preservation of mature tree canopy through the protection, replacement, and proper management of remnant forest stands and new trees; however, recent code updates to better integrate stormwater management on new development and redevelopment sites have expanded the scope of required tree protection to include the conservation of native soils and vegetation.

As outlined in the Puget Sound Partnership’s *Low Impact Development Technical Guidance Manual for Puget Sound*, the conservation of native soils and remnant stands of mature trees is a central principle of Low Impact Development design. Protecting these natural features on a development site reduces impervious area; maintains stormwater storage, infiltration, and evaporation; and provides potential dispersion areas for stormwater more akin to natural hydrologic processes.

In addition to contributing to enhanced stormwater management, the environmental benefits of maintaining an undisturbed, diverse and healthy tree canopy also include providing critical wildlife habitat, absorption of air pollutants and contamination, reduction in noise pollution, cooling effects in summer and insulation in winter, and off-setting local climate-changing greenhouse gases.

In addition to the environmental benefits, natural areas are significant opportunities for improving community member health, wellness, and connectedness. All community members can have access to experiencing the natural environment through meaningful volunteer experiences, active recreation, and engaging learning opportunities, while fostering a shared sense of place and community pride through stewardship of trees, plants, and wildlife unique to the Puget Sound region.

## 1.2 Audience

This Manual is to assist people who are responsible for the identification, preservation, and mitigation of natural vegetated areas, including remnant forest stands, and individual trees. This may include those responsible for designing projects with natural vegetated areas, working directly with soils, understory vegetation, and trees during the development and construction phases, and those responsible for ongoing monitoring and maintenance.

Users of this Manual encompass a broad range of familiarity with soil, vegetation, and tree management, ranging from landscape architects and urban foresters to property managers or homeowners.

| Who should use this Manual?          |                                                                                                                                                                                                                                                       |                                                                                                                                          |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Developers & Contractors             | This Manual includes the standards contractors must comply with for all construction activities, including the identification, preservation, protection, and mitigation for soils and vegetation required on new development and redevelopment sites. | <i>Land developers, construction managers, project managers, engineers, landscape architects, and inspectors</i>                         |
| Tree Service Providers & Landscapers | This Manual includes guidance for completing Soil and Vegetation Plans for SVPAs, tree and SVPA protection standards, plant selection and installation specifications, and mitigation standards.                                                      | <i>Tree care contractors, urban foresters, foresters, landscapers, groundskeepers, horticulturists and gardeners, wetland biologists</i> |
| Property Owners                      | This Manual provides information related to required permits for tree removal, and best practices for tree and SVPA maintenance.                                                                                                                      | <i>Commercial property owners, multi-family property owners, property managers, rental property owners, and homeowners</i>               |

## Chapter 2

### Regulations Overview

Additional tree related codes and standards may be found on the [City of Olympia](#) website.

#### 2.1 Olympia Municipal Codes

##### **OMC 16.60 Tree Soil and Native Vegetation Protection and Replacement**

<https://www.codepublishing.com/WA/Olympia/html/Olympia16/Olympia1660.html#16.60>

Whereas growth, the spread of development, and increasing demands upon natural resources have the effect of encroaching upon, impacting or eliminating many of the intact native soils and vegetation, trees and natural resources and processes associated therewith which, if preserved and maintained in an undisturbed and natural condition, provide important physical, aesthetic, recreation and economic assets to existing and future residents of the city; and whereas the city council finds (1) that trees, healthy soils, and native vegetation protect public health through the capturing and filtering of stormwater runoff, absorption of air pollutants and contamination, through the reduction of excessive noise and mental and physical damage related to noise pollution, through their cooling effect in the summer months and insulating effects in winter, through their positive impact on global climate change; (2) that trees, healthy soils, and native vegetation provide for public safety through the prevention of soil erosion, siltation and flooding; (3) that trees, healthy soils, and native vegetation are essential to the general welfare of the city by maintaining the natural beauty and the irreplaceable heritage for existing and future city residents; and (4) that Olympia can promote urban forestry and land management practices which will preserve or enhance trees, healthy soils, and native vegetation on public and private lands as they transition from natural areas into an urban environment. Therefore, the purposes of this chapter are:

- A. To provide for the protection, preservation, replacement, proper maintenance and use of trees, soils, and native vegetation located in this city in order to preserve and enhance the city's physical and aesthetic character by preventing untimely and indiscriminate removal or destruction of trees, healthy soils, and native vegetation;
- B. To protect trees, healthy soils, and native vegetation in the city for their economic support of local property values and to preserve and enhance this region's natural beauty;
- C. To minimize the adverse impacts of land disturbing activities on stormwater infiltration, soil erosion,

air quality, sedimentation and pollution of natural waterways, in order to minimize the public and private costs for stormwater control and treatment, utility maintenance and removal of pollution from our natural waterways;

D. To promote site planning, construction practices and horticultural practices that are consistent with the reasonable use of property;

E. To provide for the paramount public concern for these natural resources in the interest of a healthier and safer place in which to live and to promote the general welfare of the residents of this city;

F. To implement the goals and objectives of the Washington State Environmental Policy Act; and

G. To implement the goals and objectives of the City's Comprehensive Plan.

(Ord. 7027 §8, 2016; Ord. 5545 §1, 1995; Ord. 5248 §11(part), 1991).

#### **OMC 16.48 Clearing**

<https://www.codepublishing.com/WA/Olympia/html/Olympia16/Olympia1648.html>

These regulations are adopted for the following purposes:

A. To promote the public health, safety, and general welfare of the citizens of Olympia without preventing the reasonable development of land;

B. To encourage site development on public and private property, including cleaning, excavation, and filling in such a manner as to minimize hazards to life, health, and property;

C. To preserve and enhance the city's physical and aesthetic character by preventing untimely and indiscriminate removal or destruction of trees and ground cover;

D. To minimize surface water runoff and diversion which may contribute to flooding;

E. To reduce siltation in the city's streams, lakes, storm sewer systems, and public roadside improvements;

F. To reduce the risk of slides and the creation of unstable building sites;

- G. To promote building and site planning practices that are consistent with the city's natural topography, soils, and vegetative features while at the same time recognizing that certain factors such as disease, danger of fallings, proximity to existing and proposed structures and improvements, interference with utility services, protection of scenic views, and the realization of a reasonable enjoyment of property may require the removal of certain trees and ground cover;
- H. To ensure prompt development, restoration and replanting and effective erosion control of property after land clearing and grading;
- I. To implement the goals and objectives of the Washington State Environmental Policy Act;
- J. To implement and further the City's Comprehensive Plan and Westside Task Force resolution.

(Ord. 4231 §2, 1980).

#### **OMC 16.56 Landmark Tree Protection**

<https://www.codepublishing.com/WA/Olympia/html/Olympia16/Olympia1656.html>

The purpose of these regulations is to protect landmark trees and to establish a register of these trees. Landmark trees require protection due to their special value in that they are irreplaceable by any means. They may be associated with historic figures, events, or properties; or be rare or unusual species; or they may have aesthetic value worthy of protection for the health and general welfare of the residents of this city.

Therefore, the purpose of this chapter is:

- A. To provide for the preservation and proper maintenance of landmark trees located in this city, to minimize disturbance to the trees themselves, and to prevent other environmental damage from erosion or destruction of wildlife habitat;
- B. To protect the health, safety and general welfare of the residents of this city; and
- C. To implement the goals and objectives of the city's comprehensive plan. (Ord. 5181 §1(1), 1991)

## **OMC 16.58 Public Trees**

<https://www.codepublishing.com/WA/Olympia/html/Olympia16/Olympia1658.html>

The purpose of these regulations is to encourage responsible management of public tree resources within the City of Olympia in a fashion consistent with the goals and policies of the Comprehensive Plan. Because trees growing on public property provide benefits to the greater public at large, they are deserving of greater protection than that afforded to privately owned trees. Proper protection, planting, and maintenance is required to promote tree health and aesthetics; foster species diversity; and to preserve the public tree canopy. Therefore, the purposes of this Chapter are:

- A. Encourage the planting of new trees and the maintenance of existing trees for all the benefits they provide to the community.
- B. Maintain public trees in a healthy and nonhazardous condition through good arboricultural practices.
- C. Manage trees and vegetation on public property in a manner that represents the best interests of the public.
- D. Encourage a diversity of appropriate species of trees.

(Ord. 5827 §1, 1998)

## **Title 12 Streets, Sidewalks and Public Places**

<https://www.codepublishing.com/WA/Olympia/html/Olympia12/Olympia12.html>

### **Specifically 12.44 Street Trees**

<https://www.codepublishing.com/WA/Olympia/html/Olympia12/Olympia1244.html>

On all streets within the city which have been paved, or may hereafter be paved, with some permanent material, wherever there is a parking strip, trees shall be planted as provided for in this chapter and the Engineering Design and Development Standards.

(Ord. 7181 §7, 2019; Ord. 7045 §4, 2016; Ord. 1353 §1, 1915).

## **Title 18.32 Critical Areas**

<https://www.codepublishing.com/WA/Olympia/html/Olympia18/Olympia1832.html>

It is the intent of this Chapter to implement the State of Washington Growth Management Act and its guidelines, the Countywide Planning Policies, and the Olympia Comprehensive Plan by:

- A. Protecting critical areas, associated buffers, and their functions, and values while allowing reasonable use of property by:
  - 1. achieving no net loss of critical areas values and functions;
  - 2. directing activities not essential in such areas to other locations;
  - 3. providing for review of proposed uses and activities on properties containing critical areas or their buffers to achieve compliance with standards designed to minimize impacts to critical areas and associated buffers; and
  - 4. providing for mitigation of unavoidable impacts;
- B. Establishing enforcement tools and processes designed to deter activities in violation of this chapter and provide for remedial action for unauthorized impacts to critical areas and their buffers;
- C. Maintaining groundwater recharge and preventing the contamination of groundwater resources;
- D. Minimizing damage due to landslides, seismic events, erosion or flooding;
- E. Protecting natural flood control and stormwater storage from alterations to drainage or stream flow patterns;
- F. Protecting wildlife habitat and species where possible throughout the City;
- G. Controlling siltation, protecting nutrient reserves and maintaining stream flows and stream quality for fish and marine shellfish;
- H. Minimizing turbidity and pollution of wetlands, streams and fish-bearing waters and maintaining their associated wildlife habitat;

- I. Protecting the general public against avoidable losses from:
  - 1. Property damage and the cost of replacing public facilities,
  - 2. Subsidizing public mitigation of avoidable impacts, and
  - 3. The cost for public emergency rescue and relief operations;
- J. Identifying and mapping critical areas so that this information is available to appraisers, planners, assessors, owners, and potential buyers and lessees of property;
- K. Assisting property owners in developing their property consistent with this Chapter by promoting the use of innovative land use techniques.

(Ord. 7030 §1 (Exh. A), 2016; Ord. 6356 §5, 2005).

#### **Title 18.36 Landscaping and Screening**

<https://www.codepublishing.com/WA/Olympia/html/Olympia18/Olympia1836.html>

The purpose of this chapter is to establish standards for landscaping and screening; to maintain or replace existing vegetation, provide physical and visual buffers between differing land uses, provide opportunities for stormwater management, lessen and improve environmental and aesthetic impacts of development and to enhance the overall appearance of the City. Notwithstanding any other provision of this chapter, trees and shrubs planted pursuant to the provisions of this chapter shall be of types and ultimate sizes at maturity that will not impair the scenic vistas protected within Chapter 18.50.100, Design Review, nor interfere with power lines, underground utilities or impervious surface.

## 2.2 Engineering Design and Development Standards

### Chapter 4 Transportation

<https://www.codepublishing.com/WA/Olympia/edds/OlympiaEDDS04.html>

#### **4H.100 Street Trees**

- D. Tree Grates. Street trees planted in [sidewalks](#) shall be in tree grates conforming to City Standards. See [Standard Drawing 4-49](#) for Tree Grate requirements.
- E. Planting Bed Preparation (Planting Strip configuration). See [Standard Drawing 4-50](#) for requirements.
- F. Sidewalk with Tree Grate (Tree Well configuration). See [Standard Drawings 4-51](#) and [4-52](#) for requirements.

## Chapter 3

### Glossary

- *No person or representative, directly or indirectly, shall remove, or destroy any tree, within the City, without first obtaining a tree removal permit as provided in this chapter, unless the activity is exempted in OMC 16.60.040.*
- *A “tree” is any self-supporting perennial woody plant characterized by one main stem or trunk of at least one (1) inch d.b.h. maturing at a height of at least seven (7) feet above ground level with a definite crown, (OMC 16.60.020, 16.48.030, 18.02.180).*
- *A “hazard tree” is any tree with a combination of structural defect and/or, disease which makes it subject to a high probability of failure, and is within close enough proximity to where persons or property could be harmed or damaged if the tree were to fail (OMC 16.60.020).*
- *“Development” is the division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any structure; any mining, excavation, landfill, clearing or land disturbance; and any use or extension of the use of the land (OMC 16.60.020).*
- *“Soil and Vegetation Protection Areas (SVPAs)” are separate tracts of land, which may or may not be deeded as such, specifically set aside for the preservation of healthy soil and the preservation or planting of existing and/or native vegetation, including trees.*
- *Common unauthorized activities in existing SVPAs or tree tracts include, but are not limited to, removing trees, removing understory vegetation, building structures (i.e., sheds), changing the soil grade, and fencing areas for person use.*
- *A “qualified professional forester” is a professional with academic and field experience that makes them an expert in urban forestry...A professional forester must possess the ability to evaluate the health and hazard potential of existing trees in an urban environment, and the ability to prescribe appropriate measures necessary for the preservation of trees during land development and management of those trees thereafter (OMC 16.60.020).*
- *To remove a tree(s) on sites with an existing house, duplex, triplex, or fourplexes, completion of a Tree Removal Permit Application may be all that’s needed to meet the requirements of a Level I Soil and Vegetation Plan.*
- *A Level II “Soil and Vegetation Plan (SVP)” is for developed commercial, industrial, and multi-family properties; new development requires a Level V SVP.*
- *A “nuisance tree” is causing obvious physical damage to private or public property (OMC 16.60.070(H)).*

- A “Conversion Option Harvest” is when a property owner harvests a limited amount of timber from their property and maintains the ability to convert it to another land use, after a six (6) year moratorium and a signed letter of intent.
- “Invasive species” are non-native organisms that are capable of spreading so quickly they can cause economic or environmental harm (OMC 16.60.020.)
- Plants on the “Prohibited Plant List” have characteristics that despite being well-adapted to site conditions, make them invasive, subject to disease, likely to damage infrastructure, or otherwise cause future management issues (OMC 18.36.060(E)(3)).
- “Native vegetation” is vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site (OMC 16.60.020).
- “Well-Adapted Drought-Tolerant Vegetation” is vegetation that is well adapted to current and anticipated environmental conditions in this region and is not invasive or noxious (OMC 16.60.020).
- “Understory” vegetation includes shrubs and plants and growing beneath the main canopy of a forest, stand of trees, or individual tree; including low-growing vegetation that covers the ground.
- “Critical root zone” is the area where the tree’s roots are located. This root zone is generally the area surrounding a tree at a distance which is equal to one foot for every inch of tree DBH (Diameter at breast height) (OMC 16.60.020).
- “Critical areas” include drinking water (wellhead) protection areas, important habitats and species, streams and important riparian areas, wetlands and small lakes, and landslide hazard areas (OMC Chapter 18.32 - Critical Areas).
- The “Stormwater Site Management Plan” is a site-specific, comprehensive document that addresses not only the operation and maintenance of structural stormwater system components, but also addresses the management of tree tracts, Soil and Vegetation Protection Areas, vegetation dispersal areas, and low impact development stormwater controls.

## OLYMPIA MUNICIPAL CODE 16.60.020 DEFINITIONS

- *"Agriculture" is the use of land for the primary purpose of deriving income from growing plants or trees on land including, but not limited to, land used principally for fruit or timber production, but not including land used principally for another use and only incidentally for growing trees or plants for income.*
- *"Buildable area" is that portion of a parcel of land wherein a building, parking and other improvements may be located and where construction activity may take place.*
- *"Caliper" is the American Association of Nurseryman standard for trunk measurement of nursery stock. Caliper of the trunk shall be the trunk diameter measured 6" above the ground for up to and including 4" caliper size and 12" above the ground for larger sizes.*
- *"City" is the city of Olympia, Washington.*
- *"Clearing" is the destruction or removal of vegetation from a site by physical, mechanical, chemical or other means. This does not mean landscape maintenance or pruning consistent with accepted horticultural practices which does not impair the health or survival of the trees.*
- *"Commercial nursery or tree farm" is a licensed plant or tree nursery or farm in relation to those trees planted and growing on the premises of the licensee, which are planted and grown for sale through retail or wholesale channels in the ordinary course of the licensee's business.*
- *"Crown" is the area of a tree containing leaf or needle-bearing branches.*
- *"Diameter at Breast Height (DBH)" is a tree's diameter in inches at 4-1/2' feet above the ground. On multi-stemmed or trunked trees, the diameter shall be the diameter equivalent to the sum of trunk areas measured at 4-1/2' above the ground.*
- *"Grading" is any excavation, filling of earth materials or any combination thereof.*
- *"Healthy soil" is soil that is of good quality with the capacity to sustain plant, animal, and human life by providing nutrients, air and water space to infiltrate, pollutant absorption and filtering, and habitat.*
- *"Landmark tree" is a tree or group of trees designated as such by the City because of its exceptional value to the residents of the city (see OMC Chapter 16.56 Landmark Tree Protection).*
- *"Limits of construction line" is a line separating the buildable areas from the protected areas.*
- *"Mitigation" is the act of restoring, creating, enhancing, or preserving a naturally occurring ecosystem to generate an increase in environmental functions to compensate for losses due to development or willful or negligent destruction of that ecosystem.*

- *"Protected area" is all land where no construction activity, tree removal, vegetation removal, or soil compaction is allowed and includes the critical root zone of those trees to be preserved.*
- *"Remove or removal" is the act of removing a tree by digging up, cutting down or any act which causes a tree to die, significantly impacts its natural growing condition and/or results in diminished environmental benefits or a hazard tree; including but not limited to, damage inflicted on the root system by machinery, storage of materials or soil compaction; changing the ground level in the area of the tree's root system; damage inflicted on the tree permitting infections or infestation; excessive pruning; paving with concrete, asphalt or other impervious material within the critical root zone, or any other action which is deemed harmful to the tree.*
- *"Significant (upland) Wildlife Habitat" is an area designated as such in the Olympia Comprehensive Plan, or designated as state priority habitat, and which is utilized by state priority or local priority animal species with unusual frequency, density or diversity for critical ecological processes such as breeding, nesting, nursery, feeding, and resting.*
- *"Soil and Vegetation Plan" is a plan that contains specific information pertaining to the protection of healthy soil, and the preservation and planting of trees and native vegetation pursuant to OMC 16.60 and the City of Olympia's Urban Forestry Manual.*
- *"Specimen tree" is a tree that has been given greater than standard tree density value through the evaluation process delineated in the Urban Forestry Manual.*
- *"Street trees" is trees located within the street rights-of-way, adjacent to public or private streets, including undeveloped areas.*
- *"Transplant" is the relocation of a tree from one place to another on the same property.*
- *"Tree unit" is a unit of measurement based upon the size of the tree as set forth in the Urban Forestry Manual.*
- *"Undeveloped" is a parcel of land on which no buildings or other facilities are located.*
- *"Urban forestry" is the professional practice of planning, managing and protecting natural and planted vegetation in developing urban areas.*
- *"Urban Forester" is the City of Olympia's Urban Forester or the Urban Forester's designee.*
- *"Windfirm" is a tree which is capable of withstanding strong winds, in particular when associated with inclement weather events.*
- *"Worksite" is any contiguous area owned and operated as one development unit upon which earth disturbing activities are planned or underway.*

## Chapter 4

### Calculating Tree Density

A minimum of 30 tree units per acre is required on the buildable area of each site. The exceptions are in the Green Cove Basin and all Residential Low Impact (RLI) zoning districts of the City, in which there is a required minimum tree density of 220 tree units per acre, and undeveloped properties proposing a conversion option harvest are required to meet a minimum tree density of 200 tree units per acre.



*“Buildable area” is that portion of a parcel of land wherein a building, parking and other improvements may be located and where construction activity may take place.*

The buildable area of a site is the portion of land wherein a building, parking, and other improvements may be located and where construction may take place. Buildable areas do not include critical areas\* as defined in OMC 18.32 - Critical Areas. Additionally, for the purposes of calculating required minimum tree density, existing and newly dedicated City rights-of-way shall not be included.\*Except in the Green Cove Basin where the critical areas are included in the buildable area and the trees in the critical area count toward the minimum tree density.

Tree units are determined by measuring the trunk size of existing individual trees. Larger and more mature trees are worth more tree units. Consequently, fewer large trees are needed to meet a site’s required tree density.

The retention of existing, mature trees in good condition is given priority in meeting a site’s minimum tree density, SVPA requirements, and landscaping requirements; however, when not feasible, tree density can be met by replacement trees, or a combination of existing and replacement trees. See OMC 16.60.070(D)(6) for priorities when retaining existing trees.

See below for guidance on calculating tree density for individual trees and groupings of individual trees and calculating tree density for forested sites. Sites with forest stands may follow a separate procedure that takes into account the greater number of trees. Note that the method for determining the tree density of a forested stand will require the assistance of a professional forester.

#### 4.1 Tree Density Calculation for Individual Trees

1. Measure the stem diameter of each tree to be preserved at 4.5 feet above the ground. This is called Diameter at Breast Height (DBH), and is measured in inches. DBH can be measured with a specially calibrated diameter tape (often referred to as a d-tape) that displays the diameter measurement when wrapped around the circumference of a tree.

*Tip: If you don't have access to a d-tape, you can find the diameter of the tree using a string, a measuring tape, a thumbtack, and a calculator.*

- a. With the measuring tape, measure 4.5 feet up the trunk of the tree from the ground. Use a thumbtack to mark the height on the tree.
- b. Wrap your string around the tree trunk at 4.5 feet. Make sure the string is straight and tight around the trunk, and mark or cut the circumference on the string.
- c. Measure the length of string to get the circumference of the tree.
- d. Convert the circumference measurement to diameter by dividing the circumference by Pi (3.14).

Source: City of Portland website: How to Measure a Tree / [www.portlandoregon.gov/trees](http://www.portlandoregon.gov/trees)

2. See Table 4-A; select the tree unit value that corresponds to the DBH for each tree.
3. Example Minimum Tree Density Calculation:
  - a. The buildable area for a residential property is .5 of an acre.
  - b. Multiply .5 x 30 tree units/acre.
  - c. Answer: A required minimum tree density of 15 tree units.
  - d. The property has existing on it:
    - 2 (two) Douglas-fir trees that each measure 20" DBH
    - 1 (one) Red oak that measures 15" DBH
    - 2 (two) Red alders that each measure 8" DBH
  - e. The total existing tree units are calculated as:
    - 20" Douglas-fir = 5 tree units x 2 (trees) = 10 tree units
    - 15" Red oak = 2.5 tree units
    - 8" Alder = 1.5 tree units x 2 (trees) = 3 tree units
  - f. Total tree units on site: 10 + 2.5 + 3 = 15.5 tree units
  - g. The required minimum tree density of 15 tree units for the property is met by the existing trees on site.

**TABLE 4-A. Tree Unit Values for Existing Trees**

| DBH    | TREE UNITS | DBH | TREE UNITS | DBH | TREE UNITS |
|--------|------------|-----|------------|-----|------------|
| 1"-6"  | 1          | 24" | 7          | 38" | 14         |
| 6"-12" | 1.5        | 26" | 8          | 40" | 15         |
| 14"    | 2          | 28" | 9          | 42" | 16         |
| 16"    | 3          | 30" | 10         | 44" | 17         |
| 18"    | 4          | 32" | 11         | 46" | 18         |

|     |   |     |    |     |    |
|-----|---|-----|----|-----|----|
| 20" | 5 | 34" | 12 | 48" | 19 |
| 22" | 6 | 36" | 13 | 50" | 20 |

#### 4.2 Tree Density Calculation for Forested Stands

1. Inventory the existing forested stand, using standard forest measurement techniques. Determine the average basal area per acre of the dominant and co-dominant stems.
2. Convert the Average Basal Area per acre to tree units per acre by multiplying the Average Basal Area by (2) two.

#### 4.3 Critical Areas and Critical Area Buffers

Trees located within critical area buffers may account for up to 50 percent of a project site's required tree density. The exception is within the Green Cove Basin, where trees in critical areas and critical area buffers may account for up to 100 percent of the required tree density.

#### 4.4 Tree Replacement Requirements: Commercial, Industrial, and Multi-family Properties

Already developed commercial, industrial, and multi-family (five (5) units or more) zoned properties and land uses that propose an addition or site disturbance are required to replace a minimum tree density of one (1) tree unit for every 500 square feet of site area to be disturbed.

Already developed commercial, industrial, and multi-family (five (5) units or more) zoned properties and land uses must also replace three (3) tree units for every one (1) tree unit proposed for removal, up to the minimum tree density of 30 tree units per acre for the entire site.

"Site area disturbed" shall include: installation or expansion of a building or other structure; drilling; and site alterations such as those due to land surface mining, dredging, grading, construction of earthen berms, paving, improvements for use as parking or storage, excavation or clearing.

## Chapter 5

# Tree, Soil, and Vegetation Removal

The intent of the Tree, Soil, and Native Vegetation Protection and Replacement regulations is to preserve and protect healthy soils, native vegetation, and mature trees. However, there are times in which areas of vegetation or individual trees need to be removed or can be removed. Trees become diseased, at risk of failing and causing harm to people or property or may not be appropriate for the location in which they were planted.

This chapter will provide guidance for when a tree may or may not be removed, and when a permit is required.

### 5.1 Tree & Vegetation Removal



*A “tree” is any self-supporting perennial woody plant characterized by one main stem or trunk of at least one (1) inch d.b.h. maturing at a height of at least seven (7) feet above ground level with a definite crown, (OMC 16.60.020, 16.48.030, 18.02.180).*

#### 5.1.1 What is a tree “removal”?

A tree is considered removed when it is physically removed, killed, or damaged to an extent that it needs to be removed or can no longer provide environmental benefits, such as soil erosion control or water and pollutant storage (OMC 16.60.020).

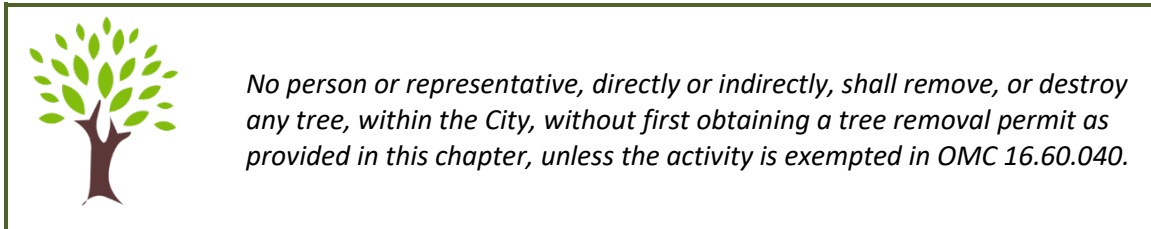
| The act of removing a tree includes:                    |                                                                                                                       |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Digging up the whole tree                               | Cutting down the whole tree                                                                                           |
| Cutting or damaging the root system                     | Compacting soils within the critical root zone                                                                        |
| Changing the ground level within the critical root zone | Paving over the critical root zone                                                                                    |
| Excessive pruning (e.g., topping, windsailing)          | Causing damage to a tree that results in disease infection or pest infestation (e.g., inappropriate climbing methods) |
| Girdling                                                | Pruning that results in a hazard tree (e.g., “lion-tailing, windsailing and topping”)                                 |

#### 5.1.2 When do I need a permit?

Unless exempt per Olympia Municipal Code (OMC) 16.60.040 (see list below), a permit is required to remove a tree and trees and/or vegetation within an SVPA. All tree and/or soil and vegetation protection removal requests shall be submitted to the Urban Forester using a Tree Removal Permit Application.

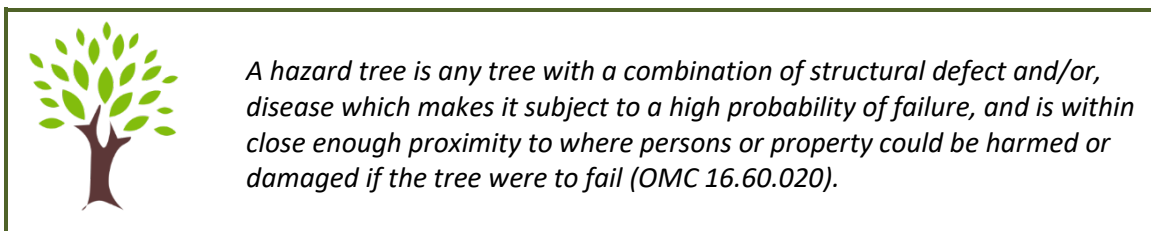
When a permit is required, the Urban Forester may deny the permit, approve the permit, or approve the permit with conditions. Examples of conditions of approval include replanting trees to maintain a minimum tree density on the property or specific protection requirements for other trees or vegetation in the vicinity of the removal.

OMC 16.60.040 lists when trees and vegetation may be removed without a permit.



A permit is NOT required to:

1. Remove trees being grown to be sold as Christmas or landscape trees.
2. Remove trees as necessary to protect public safety or private or public property from imminent danger as determined by the Urban Forester or in response to emergencies declared by the City, County, State or Federal Government.
3. Remove trees and other vegetation as allowed with a Forest Practices Permit issued by the Washington State Department of Natural Resources.
4. Remove hazard trees.



5. Remove trees and other vegetation from developed single-family and multi-family (5 units or less) properties less than two acres, so long as the minimum required tree density is maintained, and no critical areas or critical area buffers are present.
6. Remove trees on developed single-family and multi-family (up to four units) properties that are two or more acres, removal of trees and other vegetation within 125' of the residence or other buildings (unless required to be installed and properly maintained specifically to facilitate stormwater infiltration or dispersion and critical area buffers are present). That portion of the property further than 125' from the residence or other buildings shall be treated as undeveloped property.

7. Remove trees on individual lots within a subdivision when the entire subdivision has complied with the tree density and soil and vegetation protection requirements.
8. Remove up to six trees per acre, up to a total of six trees from an undeveloped parcel within any twelve-month consecutive period.
9. Remove street trees when performed by or on behalf of the City, with the approval of the Urban Forester.

## 5.2 Critical Areas

Critical areas include drinking water (wellhead) protection areas, important habitats and species, streams and important riparian areas, wetlands and small lakes, and landslide hazard areas (i.e., steep slopes). Development is very limited within these areas to protect their environmental functions. Removing, damaging, or otherwise negatively impacting soils, understory vegetation, and trees in critical areas is prohibited without prior approval from the Community Planning and Development Department.



*Removing, damaging, or otherwise negatively impacting soils, understory vegetation, and trees in critical areas is prohibited without prior approval from the Community Planning and Development Department.*

Tree and vegetation removals that are listed as exempt in OMC 16.60.040 may be considered for approval within a critical area. For a complete list of what activities are exempt, prohibited, or allowed with approval in critical areas, see OMC 18.32 - Critical Areas.

Some marine and lake shorelines that are not already designated as critical areas may be under the jurisdiction of the City's Shoreline Master Program. Removal of trees and other vegetation is very limited in those areas and will require prior approval from the Community Planning and Development Department.

## 5.3 Undeveloped Properties

A maximum of six trees per acre, up to a total of six trees within any twelve-month consecutive period, may be removed from an undeveloped property without a permit. For example, a .5-acre size property may remove up to three trees within a twelve-month period without a permit.

To remove additional trees that are not otherwise exempt, an approved Conversion Option Harvest permit is required. A Conversion Option Harvest is when a property owner harvests a limited amount of timber from their property and still maintains the ability to convert it to another land use in the near future.

Conversion Option Harvests are *not* permits to clear all harvestable timber from a parcel, but are limited in the extent of allowable tree removal to preserve viable trees for future development; only up to 30% of the number or volume of trees, by species, can be removed every 10 years *and maintains the ability to convert it to another land use after a six (6) year moratorium and a signed letter of intent.*

A Level VI (6) Soil and Vegetation Plan must be prepared which demonstrates how the applicant will meet the following Conversion Option Harvest standards:

1. A limit of 30% of the number or volume of trees, by species, can be removed every 10 years.
2. Trees to remain should be dominant or co-dominant in the stand, healthy, and windfirm.
3. Trees to remain should be located on the site in areas that would most likely facilitate their preservation through the build-out of the site.
4. No removal of trees from critical areas or buffers (as defined in OMC 18.32).
5. No removal of Landmark Trees (as defined in OMC 16.56).
6. No removal of trees that would cause trees on adjacent properties to become hazardous.
7. Logging operations are conducted so as to expose the smallest practical area of soil to erosion for the least possible time; appropriate stormwater pollution prevention measures shall be used (see the Drainage Design and Erosion Control Manual, Volume II).
8. Slash abatement practices abide by current Olympia Fire Department standards.
9. *Maintains the ability to convert it to another land use after a six (6) year moratorium and a signed letter of intent.*

See Chapter 6 for a complete Level VI (6) Soil and Vegetation Plan requirement checklist.

## Chapter 6

### Soil & Vegetation Plans

Soil and Vegetation Plans (SVPs) are required to obtain a tree removal permit for any new land development or redevelopment with the potential to impact soils, understory native vegetation, or trees. Development includes, but is not limited to, subdivisions, new construction, remodels, significant landscaping projects, clearing and grading, and other land disturbances.



*“Development” is the division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any structure; any mining, excavation, landfill, clearing or land disturbance; and any use or extension of the use of the land (OMC 16.60.020).*

SVPs provide the Urban Forester with critical information about the project, including technical information, site analysis, site development and design drawings, and long-term maintenance plans. This information is needed for the Urban Forester to issue a determination on what soils, understory vegetation, and trees can be removed, where to site a Soil and Vegetation Protection Area (SVPA), and what replacement or mitigation requirements may be required for compliance with OMC 16.60 - Tree, Soil, and Native Vegetation Protection and Replacement.



*“Soil and Vegetation Protection Areas (SVPAs)” are separate tracts of land, which may or may not be deeded as such, specifically set aside for the preservation of healthy soil and the preservation or planting of existing and/or native vegetation, including trees.*

There are six levels of SVPs; the scale of the project and the size and quantity of trees proposed for removal, preservation, and planting determines which Level SVP is required. For example, homeowners requesting to remove trees, and whose property will subsequently drop below the required minimum tree density, may complete a Level I (1) SVP with little or no professional assistance. A new commercial development project with significant impacts to existing soils, native vegetation, and trees will be required to hire a qualified professional forester to produce a Level V (5) SVP.



*A “qualified professional forester” is a professional with academic and field experience that makes them an expert in urban forestry...A professional forester must possess the ability to evaluate the health and hazard potential of existing trees in an urban environment, and the ability to prescribe appropriate measures necessary for the preservation of trees during land development and management of those trees thereafter (OMC 16.60.020).*

## 6.1 General Plan Requirements

Required elements for each of the five SVPs are listed below. The Urban Forester may waive detailed plan requirements or the requirement for the assistance of a professional forester if the information submitted is sufficient to determine compliance with Olympia Municipal Code (OMC) Chapter 16.60. The Urban Forester may also require additional detailed information as deemed necessary to ensure compliance or attach conditions on the project approval to ensure the long-term health and survival of trees and understory vegetation pursuant to protection, planting, and maintenance standards established in this manual.

### 6.1.1 Tree, Soil, and Native Vegetation Report

The information and analysis in the Tree, Soil, and Native Vegetation Report (Report) is essential to the design of the Site Map, and must be prepared by a qualified professional forester (except a Level I SVP, for which the assistance of a professional forester may not be required). While the level of detail may vary depending on the size and complexity of a project site, a Report is generally comprised of the following elements:

*Project Narrative and Existing Conditions.* The project narrative outlines the scope and desired outcome for the proposed improvements. The Existing Conditions elements of the Report describe existing natural and developed site conditions. This may include, but is not limited to, existing property lines, impervious surfaces, buildings, soil types, trees, associated understory vegetation, invasive species, and trees on adjacent properties that may be adversely impacted by the proposed development.

*Tree Density Calculations.* Tree density calculations demonstrate the project parcel's minimum required tree density and how that figure will be met or exceeded through the preservation and protection of existing trees, planting of new trees, or a combination of both. See Chapter 4 for how to calculate tree density.

*Protection Measures.* Protection measures, such as protective fencing and limits on grading, help ensure that healthy soils, trees, and associated understory vegetation are preserved and protected throughout construction. The Report shall include locations, designs, and installation and removal timelines for all tree and SVPA protection measures. See Chapter 7 for tree, soil, and vegetation protection standards.

*Replacement Planting and Soil and Vegetation Mitigation.* For parcels where the required minimum tree density is not met through preserving existing trees, and/or there are not adequate healthy soils and native vegetation on site to designate an SVPA, the report needs to include details for replacement planting and mitigation. Requirements to be addressed include, but aren't limited to, the quality, size, and diversity of planting stock, site preparation and remediation, timeframes for installation, and any monitoring and/or maintenance measures to ensure long-term establishment and survival.

### 6.1.2 Site Map

All SVPs require a Site Map and/or certain required elements to be included on other related plan sets, such as a Construction Stormwater Pollution Prevention Plan (C-SWPPP). A Site Map may be prepared by a professional forester, but more likely a landscape architect or engineer in consultation with a

professional forester. The Site Map details the location of existing development, the location and condition of existing trees, soils, and vegetation, and what changes are proposed for the project site.

The Site Map and the Tree, Soil, and Native Vegetation Report need to be consistent; the Site Map, including the proposed site design, needs to reflect and respond to the information and analysis in the Tree, Soil, and Native Vegetation Report.

Each level of SVP includes specific Site Map requirements based on the extent and complexity of the proposed development or tree removal; see the checklists below for required elements, and when certain elements need to be included on other related plan sets.

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## 6.2

### Level I (1) Soil and Vegetation Plan

#### **REQUIRED FOR:**

New development—residential land uses with 1-4 units (including single-family homes, duplexes, triplexes, and fourplexes).

**PROFESSIONAL FORESTER:** May be required.



*To remove a tree(s) on sites with an existing house, duplex, triplex, or fourplexes, completion of a Tree Removal Permit Application may be all that's needed to meet the requirements of a Level I Soil and Vegetation Plan.*

#### **REQUIRED ELEMENTS:**

##### **Tree, Soil, and Native Vegetation Report:**

###### *Existing Conditions and Project Narrative:*

- ☐ Narrative detailing the project scope, including the amount in square feet of land disturbance being proposed; desired outcomes; and anticipated impacts to existing soils, native vegetation, and/or trees on site

###### *Tree Density Calculations:*

- ☐ Calculate the buildable area of the project parcel in square feet
- ☐ Based on the parcel's buildable area, calculate the site's required minimum tree density (see Chapter 4 for how to calculate tree density)
- ☐ Show the location, number and size of trees proposed for removal
- ☐ Demonstrate how minimum tree density will be met either through the preservation and protection of existing trees, planting of new trees, or a combination of both

###### *Tree Protection:*

- ☐ For trees identified to be retained, describe how they will be protected during construction or land disturbing activities (see Chapter 7 for tree, soil, and native vegetation protection standards)
- ☐ Include tree protection measures on the Site Map

##### **Site Map:**

- ☐ Property lines, parcel numbers, and ownership
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities, and any other existing improvements

- ☐ Location of any known critical areas or buffers (as defined in Olympia Municipal Code Chapter 18.32)
- ☐ Location and footprint of all planned improvements (if applicable)
- ☐ Approximate location of trees to be retained and removed.
- ☐ Approximate location, species, size, and quantity of trees to be planted (if applicable)
- ☐ Tree density calculations

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## 6.3

### Level II (2) Soil and Vegetation Plan

#### **REQUIRED FOR:**

Developed sites—commercial, industrial, and multi-family (five (5) units or more) land uses proposing an addition or site disturbance.

**PROFESSIONAL FORESTER:** Required.



*A Level II SVP is for developed commercial, industrial, and multi-family properties; new development requires a Level V SVP.*

#### **REQUIRED ELEMENTS:**

##### **Tree, Soil and Native Vegetation Report:**

###### *Existing Conditions and Project Narrative:*

- ☐ Narrative detailing the project scope, including the amount in square feet of land disturbance and/or structural additions being proposed; desired outcomes; and anticipated impacts to existing soils, native vegetation, and/or trees.
- ☐ Narrative detailing existing soil conditions, including:
  - ☐ Underlying soils on the site utilizing soil surveys, soil test pits, soil borings, or soil grain analyses (soils report findings from a professional soil scientist for a Drainage Control Plan may be used to fulfill this requirement)
  - ☐ Existing soil compatibility for tree and native vegetation retention
  - ☐ Near-term and long-term impacts to soils by the proposed construction activity and resulting new development, including, but not limited to, changes in land use, site topography, and/or hydrology
- ☐ Narrative description of SVPAs proposed for stormwater dispersion (this information can be found on the Drainage/Grading/Earthwork drawings required for a Drainage Control Plan)
- ☐ Narrative description of existing native vegetation: distribution, species, and condition
- ☐ Narrative description of invasive vegetation: distribution and species

###### *Tree Density Calculations:*

- ☐ Calculate the buildable area of the site in square feet and the proposed site area to be disturbed in square feet
- ☐ Show the quantity, size, and equivalent tree units for trees proposed for removal
- ☐ Calculate the replacement tree density required based on the area of the site to be disturbed and trees proposed for removal
- ☐ Demonstrate how density will be met either through the retention of existing trees, planting of new

trees, or a combination of both (See Chapter 4 for how to calculate tree density)

*Tree and SVPA Protection:*

- ☐ Assessment of the potential impacts to soils, understory vegetation, and/or trees from the proposed construction and/or development activity
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards)
- ☐ Timeline for clearing, grading, and installation of tree and SVPA protection measures

*Planting and Mitigation:*

- ☐ Narrative description and detail showing any site preparation installation and maintenance measures necessary for the long-term establishment and growth of newly installed trees and other plant material, including, but not limited to: remediation of compacted or contaminated soils, removal of invasive species, planting of native understory vegetation, or restorative tree pruning
- ☐ Type, quantity, and distribution of soil amendments or other soil improvements
- ☐ Location, size, species, and quantity of trees (including street trees) and plant material to be installed
- ☐ Location, number, species, and size of any trees to be installed off-site, or dollar amount of fees to be paid in-lieu of tree installation (if applicable)
- ☐ Timeline for site preparation, installation, and maintenance of soils, trees, and plant material
- ☐ Cost estimate for the purchase, installation, and three (3) years of maintenance for all soils, trees, and plant material

**Site Maps:**

*Existing Conditions and Project Proposal (surveyed and drawn to scale):*

- ☐ Property lines, parcel numbers, and ownership
- ☐ Existing grades, proposed grades, and construction stormwater pollution prevention measures
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities and dispersion areas, and any other improvements
- ☐ Limits of construction and the location and footprint of all planned improvements
- ☐ Location of any critical areas or buffers (as defined in Olympia Municipal Code Chapter 18.32)
- ☐ Location of soil logs (Soil log locations on Drainage/Grading/Earthwork drawings for a Drainage Control Plan will fulfill this requirement)
- ☐ Location of existing trees, street trees, tree tracts, and SVPAs, including critical root zones, with potential to be impacted by the proposed site changes
- ☐ Location of trees, tree tracts, and SVPAs, including critical root zones, on adjacent properties with potential to be impacted by the proposed site changes
- ☐ Delineate SVPAs proposed for stormwater dispersion
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)

*Landscape Plan (drawn to scale):*

- ☐ Location, species, size, and quantity of trees and/or plant material to be installed
- ☐ Tree density calculations

*Grading Plan (surveyed and drawn to scale):*

- ☐ Tree survey: surveyed locations of perimeters of SVPAs and individual trees (including street trees) to be preserved and protected and their critical root zones
- ☐ Delineate SVPAs proposed for stormwater dispersion
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)

*Construction Stormwater Pollution Prevention Plan—"C-SWPPP" (surveyed and drawn to scale):*

- ☐ Tree survey: surveyed locations of perimeters of groves of trees and individual trees (including street trees) to be preserved and protected and their critical root zones
- ☐ Delineate SVPAs proposed for stormwater dispersion
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for required tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)

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## 6.4

### Level III (3) Soil and Vegetation Plan

#### **REQUIRED FOR:**

Developed sites--commercial, industrial, and multi-family (five (5) units or more) land uses proposing removal of a nuisance tree(s).

**PROFESSIONAL FORESTER:** Required.



*A “nuisance tree” is causing obvious physical damage to private or public property (OMC 16.60.070(H)).*

#### **REQUIRED ELEMENTS:**

##### **Tree, Soil and Native Vegetation Report:**

###### *Existing Conditions and Project Narrative:*

- ☐ Narrative description of the size and condition of the tree(s) being proposed for removal
- ☐ Narrative description of the problems associated with the tree, including any past history of problems, pruning and/or maintenance practices that may have contributed to the current problem(s), and methods employed previously to reduce or alleviate the problem(s).

###### *Tree Density Calculations:*

- ☐ Calculate the required minimum tree density based on the buildable area of the project parcel (see Chapter 4 for how to calculate tree density)
- ☐ For tree(s) proposed for removal, calculate the equivalent number of tree units
- ☐ Calculate the required number of replacement tree units
- ☐ Demonstrate how the required number of replacement tree units, up to the site’s minimum tree density requirement, will be met through the preservation and protection of existing trees, planting of new trees, or a combination of both

###### *Tree and SVPA Protection:*

- ☐ Assessment of the potential for damage to soils, understory vegetation, and/or trees in the vicinity of the nuisance tree
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards)

*Planting and Mitigation:*

- ☐ Narrative description and detail(s) showing any site preparation, installation, maintenance, and/or mitigation measures necessary for the long-term establishment and growth of newly installed trees and other plant material, including, but not limited to: remediation of compacted or contaminated soils, removal of invasive species, planting of native understory vegetation, and/or restorative tree pruning or care
- ☐ Type, quantity, and distribution of soil amendments or other soil improvements
- ☐ Location, size, species, and quantity of trees (including street trees) and plant material to be installed
- ☐ Location, number, species, and size of any trees to be installed off-site, and/or dollar amount of any fees to be paid in-lieu of tree installation (if applicable)
- ☐ Timeline for site preparation, installation, and maintenance of soils, trees, and plant material
- ☐ Cost estimate for the purchase, installation, and three (3) years maintenance for all soils, trees, and plant material

**Site Map:**

- ☐ Property lines, parcel numbers, and ownership
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities, and any other impacted site improvements
- ☐ Location of any critical areas or buffers (as defined in Olympia Municipal Code Chapter 18.32)
- ☐ Location of existing trees, street trees, tree tracts, and SVPA's (if applicable)
- ☐ Location, species, size and quantity of replacement trees to be installed (if applicable)
- ☐ Tree density calculations

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## 6.5

### Level IV (4) Soil and Vegetation Plan

#### **REQUIRED FOR:**

New development—sites on which there are no existing trees.

**PROFESSIONAL FORESTER:** Required.



*“Development” is the division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any structure; any mining, excavation, landfill, clearing or land disturbance; and any use or extension of the use of the land (OMC 16.60.020).*

#### **REQUIRED ELEMENTS:**

##### **Tree, Soil and Native Vegetation Report:**

###### *Existing Conditions and Project Narrative:*

- ☐ Narrative detailing the project scope; desired outcomes; and anticipated impacts to existing soils and vegetation
- ☐ Narrative detailing existing soil conditions, including:
  - ☐ Underlying soils on the site utilizing soil surveys, soil test pits, soil borings, or soil grain analyses (soils report findings from a professional soil scientist for a Drainage Control Plan may be used to fulfill this requirement)
  - ☐ Existing soil compatibility for tree and native vegetation retention
  - ☐ Near-term and long-term impacts to soils by the proposed construction activity and resulting new development, including, but not limited to, changes in land use, site topography, and/or hydrology
- ☐ Narrative description of SVPAs proposed for stormwater dispersion (this information can be found on the Drainage/Grading/Earthwork drawings required for a Drainage Control Plan)
- ☐ Narrative description of existing native vegetation: distribution, species, and condition (if applicable)
- ☐ Narrative description of invasive vegetation: distribution and species (if applicable)

###### *Tree Density Calculations:*

- ☐ Calculate the buildable area of the project parcel in square feet
- ☐ Based on the parcel's buildable area, calculate the site's required minimum tree density (see Chapter 4 for how to calculate tree density)
- ☐ List the number and size of new trees required to meet the required minimum tree density

###### *Tree and SVPA Protection:*

- ☐ Assessment of the potential impacts to trees on adjacent properties (if applicable)

- ☐ For healthy soils and/or native vegetation proposed for an SVPA, narrative description and graphic detail of SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards)
- ☐ Timeline for clearing, grading, and installation of SVPA protection measures

*Planting and Mitigation:*

- ☐ Narrative description and detail(s) showing any site preparation, installation, maintenance, and/or mitigation measures necessary for the long-term establishment and growth of newly installed trees and other plant material, including, but not limited to: remediation of compacted or contaminated soils, removal of invasive species, and planting of native understory vegetation and trees
- ☐ Type, quantity, and distribution of soil amendments or other soil improvements
- ☐ Location, size, species, and quantity of trees and plant material to be installed
- ☐ Location, size, species, and quantity of trees to be planted off-site, or dollar amount of fees to be paid in-lieu of tree installation (if applicable)
- ☐ Timeline for site preparation, installation, and maintenance of soils, trees, and plant material
- ☐ Cost estimate for the purchase, installation, and three (3) years of maintenance for soils, trees, and plant material

**Site Map:**

*Existing Conditions and Project Proposal (surveyed and drawn to scale):*

- ☐ Property lines, parcel numbers, and ownership
- ☐ Existing grades, proposed grades, and construction stormwater pollution prevention measures
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities, and any other improvements
- ☐ Limits of construction and the location and footprint of all planned improvements
- ☐ Location of any critical areas or buffers (as defined in Olympia Municipal Code Chapter 18.32)
- ☐ Location of soil logs (Soil log locations on Drainage/Grading/Earthwork drawings for a Drainage Control Plan will fulfill this requirement)
- ☐ Location of proposed SVPA(s); delineate those proposed for stormwater dispersion
- ☐ Location of SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate detail sheet than the Site Map)

*Landscape Plan (drawn to scale):*

- ☐ Location, species, and size for landscape trees, street trees, and/or plant material to be installed
- ☐ Tree density calculations

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## 6.6

### Level V (5) Soil and Vegetation Plan

#### **REQUIRED FOR:**

New development—residential subdivisions (five (5) units or more), commercial, industrial, and multi-family (five (5) units or more) land uses, and sites on which existing trees are proposed for removal and/or will be impacted by development activity

**PROFESSIONAL FORESTER:** Required.



*“Development” is the division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any structure; any mining, excavation, landfill, clearing or land disturbance; and any use or extension of the use of the land (OMC 16.60.020).*

#### **REQUIRED ELEMENTS:**

##### **Tree, Soil and Native Vegetation Report:**

###### *Existing Conditions and Project Narrative:*

- ☐ Narrative detailing the project scope, including desired outcomes and anticipated impacts to existing soils, native vegetation, and/or trees
- ☐ Narrative detailing existing soil conditions, including:
  - ☐ Underlying soils on the site utilizing soil surveys, soil test pits, soil borings, or soil grain analyses (soils report findings from a professional soil scientist for a Drainage Control Plan may be used to fulfill this requirement)
  - ☐ Existing soil compatibility for tree and native vegetation retention
  - ☐ Near-term and long-term impacts to soils by the proposed construction activity and resulting new development, including, but not limited to, changes in land use, site topography, and/or hydrology
- ☐ Narrative description of SVPAs proposed for stormwater dispersion (this information can be found on the Drainage/Grading/Earthwork drawings required for a Drainage Control Plan)
- ☐ Narrative description of existing native vegetation: distribution, species, and condition
- ☐ Narrative description of invasive vegetation: distribution and species

###### *Tree Density Calculations:*

- ☐ Calculate the buildable area of the project parcel in square feet
- ☐ Calculate the required minimum tree density based on the buildable area of the site (see Chapter 4 for how to calculate tree density)
- ☐ Show the quantity, size, and equivalent tree units for trees proposed for removal
- ☐ Demonstrate how minimum tree density will be met either through the preservation and protection of existing trees, planting of new trees, or a combination of both

#### *Tree and SVPA Protection:*

- ☐ Assessment of the potential impacts to soils, understory vegetation, and/or trees from the proposed construction and/or development activity
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards)
- ☐ Timeline for clearing, grading, and installation of tree and SVPA protection measures

#### *Planting and Mitigation:*

- ☐ Narrative description and detail(s) showing any site preparation, installation, maintenance, and/or mitigation measures necessary for the long-term establishment and growth of newly installed trees and other plant material, including, but not limited to: remediation of compacted or contaminated soils, removal of invasive species, planting of native understory vegetation, and/or restorative tree pruning or care
- ☐ Type, quantity, and distribution of soil amendments or other soil improvements
- ☐ Location, size, species, and quantity of landscape trees, street trees, and plant material to be installed
- ☐ Location, size, species, and quantity of trees to be installed off-site, or dollar amount of fees to be paid in-lieu of tree installation (if applicable)
- ☐ Timeline for site preparation, installation, and maintenance of soils, trees, and plant material
- ☐ Cost estimate for the purchase, installation, and three (3) years of maintenance for soils, trees, and plant material

#### **Site Maps:**

##### *Existing Conditions and Project Proposal (surveyed and drawn to scale):*

- ☐ Property lines, parcel numbers, and ownership
- ☐ Existing grades, proposed grades, and construction stormwater pollution prevention measures
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities, and any other improvements
- ☐ Limits of construction and the location and footprint of all planned improvements
- ☐ Location of any critical areas or buffers (as defined in Olympia Municipal Code Chapter 18.32)
- ☐ Location of soil logs (Soil log locations on Drainage/Grading/Earthwork drawings for a Drainage Control Plan will fulfill this requirement)
- ☐ Tree survey: surveyed locations of perimeters of SVPAs and individual trees to be preserved and protected and their critical root zones
- ☐ Delineate SVPAs proposed for stormwater dispersion
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)
- ☐ Trees proposed for removal

##### *Landscape Plan (drawn to scale):*

- ☐ Location, size, species, and quantity of landscape trees, street trees, and/or plant material to be installed
- ☐ Tree density calculations

*Grading Plan (surveyed and drawn to scale):*

- ☐ Tree survey: surveyed locations of perimeters of SVPAs and individual trees (including street trees) to be preserved and protected and their critical root zones
- ☐ Delineate SVPAs proposed for stormwater dispersion
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)

*Construction Stormwater Pollution Prevention Plan—"C-SWPPP" (surveyed and drawn to scale):*

- ☐ Tree survey: surveyed locations of perimeters of groves of trees and individual trees (including street trees) to be preserved and protected and their critical root zones
- ☐ Delineate SVPAs proposed for stormwater dispersion
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)

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## 6.7

### Level VI (6) Soil and Vegetation Plan

#### **REQUIRED FOR:**

Conversion Option Harvests (timber harvesting).

**PROFESSIONAL FORESTER:** Required.



*A Conversion Option Harvest is when a property owner harvests a limited amount of timber from their property and maintains the ability to convert it to another land use after a six (6) year moratorium and a signed letter of intent.*

#### **REQUIRED ELEMENTS:**

##### **Tree, Soil, and Native Vegetation Report:**

###### *Existing Conditions and Project Narrative:*

- ☐ Narrative detailing the project scope, including the amount in square feet of land disturbance; desired outcomes; and anticipated impacts to existing soils, native vegetation, and/or trees.
- ☐ Narrative detailing existing soil conditions, including:
  - ☐ Underlying soils on the site utilizing soil surveys, soil test pits, soil borings, or soil grain analyses (soils report findings from a professional soil scientist for a Drainage Control Plan may be used to fulfill this requirement)
  - ☐ Existing soil compatibility for tree and native vegetation retention
  - ☐ Near-term and long-term impacts to soils by the proposed construction activity and resulting new development, including, but not limited to, changes in land use, site topography, and/or hydrology
- ☐ Narrative description of existing forest types, including distribution, species, and condition of native vegetation
- ☐ Narrative description of the distribution and species of invasive vegetation
- ☐ Forest Inventory: a statistically accurate inventory and a stand stocking table showing the number of trees per acre, basal area per acre, and volume per acre by species and 6-inch diameter class
- ☐ Narrative description of the proposed harvesting method
- ☐ Tree stand stocking table showing the volume, number, basal area, and species of trees proposed for removal
- ☐ Construction Stormwater Pollution Prevention Plan (C-SWPP)
- ☐ Slash abatement plan pursuant to the Olympia Fire Department standards

###### *Planting and Mitigation:*

- ☐ Narrative description and detail(s) showing any site preparation, installation, maintenance, and/or mitigation measures necessary for the long-term establishment and growth of newly installed trees

and other plant material, including, but not limited to: remediation of compacted or contaminated soils, removal of invasive species, planting of native understory vegetation, and/or restorative tree pruning or care

- ☐ Type, quantity, and distribution of soil amendments or other soil improvements
- ☐ Location, size, species, and quantity of trees and plant material to be installed
- ☐ Timeline for site preparation, installation, and maintenance of soils, trees, and plant material
- ☐ Cost estimate for the purchase, installation, and three (3) years of maintenance for soils, trees, and plant material
- ☐ Tree density calculations, including: buildable area of the site and subsequent required minimum tree density; number of trees and tree units proposed for retention; and number of trees and tree units proposed for installation

### **Site Maps:**

*Existing Conditions and Project Proposal (surveyed and drawn to scale):*

- ☐ Property lines, parcel numbers, and ownership
- ☐ Existing grades, proposed grades, and construction stormwater pollution prevention measures
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities, and any other improvements
- ☐ Limits of clearing and harvesting
- ☐ Location of any critical areas or buffers (as defined in Olympia Municipal Code Chapter 18.32)
- ☐ Location of soil logs (Soil log locations on Drainage/Grading/Earthwork drawings for a Drainage Control Plan will fulfill this requirement)
- ☐ Forest Inventory:
  - ☐ Existing vegetation types delineated by forest type
  - ☐ Location of trees proposed for removal
  - ☐ Location of perimeters of groves of trees and individual trees on adjacent property which may be impacted by the proposed activity
  - ☐ Location of any Landmark trees (as defined in Olympia Municipal Code Chapter 16.56)
- ☐ Location of harvesting skid roads and landings

*Tree and Vegetation Replacement Planting Plan (drawn to scale):*

- ☐ Location, size, species, and quantity of trees and other plant material to be installed
- ☐ Details for site preparation, installation, and long-term establishment measures
- ☐ Timeline for site preparation, installation, and long-term establishment measures
- Tree density calculations, including: buildable area of the site and subsequent required minimum tree density; number of trees and tree units proposed for retention; and number of trees and tree units proposed for installation

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## Chapter 7

# Tree Protection Measures

### 7.1 Placing Materials near Trees

No person may conduct any activity within the protected area of any tree designated to remain including but not limited to parking equipment, placing solvents, storing building material and soil deposits, dumping concrete washout and locating burn holes

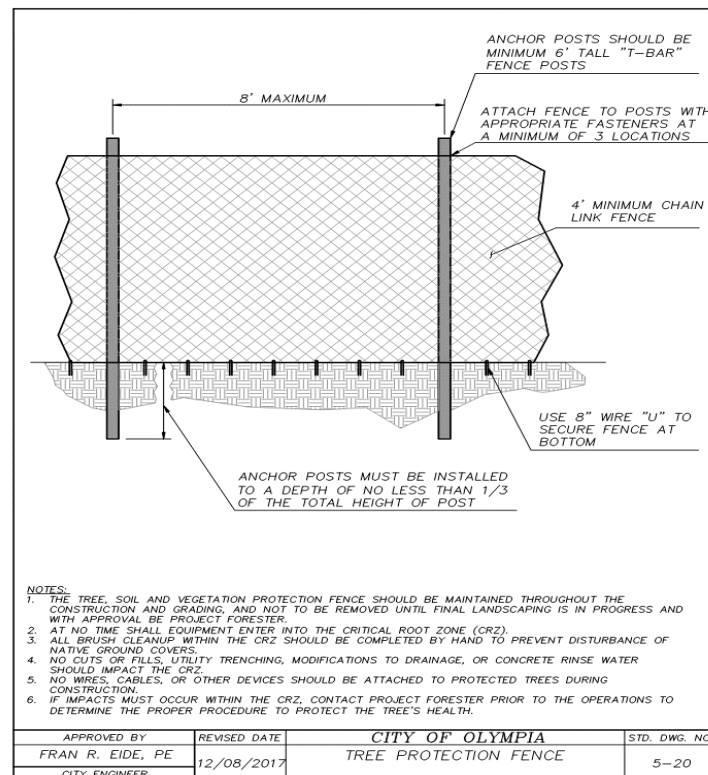
### 7.2 Attachments to Trees

During construction no person shall attach any object to any tree designated for protection

### 7.3 Protective Barrier

Before development, land clearing, filling or any land alteration for which a Tree Removal Permit is required, the applicant:

- Shall erect and maintain protective tree fencing along the outer edge and completely surrounding the protected area of all protected trees or groups of trees. Fences shall be constructed of chain link and at least four feet high, unless other type of fencing is authorized by the Urban Forester



- May be required to cover with mulch to a depth of at least six (6) inches or with plywood or similar material the areas adjoining the critical root zone of a tree in order to protect roots from damage caused by heavy equipment
- Shall prohibit excavation or compaction of earth or other potentially damaging activities within the barriers
- May be required to minimize root damage by excavating a two (2) foot deep trench to cleanly sever the roots of trees to be retained
- Shall maintain the protective barriers in place until the Urban Forester authorizes their removal or a final Certificate of Occupancy is issued, whichever occurs first
- Shall ensure that any landscaping done in the protected zone subsequent to the removal of the barriers shall be accomplished with light machinery or hand labor

#### **7.4 Grade**

1. The grade shall not be elevated or reduced within the critical root zone of trees to be preserved without the Urban Forester's authorization. The Urban Forester may allow coverage of up to one-half of the area of the Tree's critical root zone with light soils (no clay) to the minimum depth necessary to carry out grading or landscaping plans, if it will not imperil the survival of the tree. Aeration devices may be required to ensure the tree's survival
2. If the grade adjacent to a preserved tree is raised such that it could slough or erode the tree's critical root zone, it shall be permanently stabilized to prevent suffocation of the roots
3. The applicant shall not install an impervious surface within the critical root zone of any tree to be retained without the authorization of the Urban Forester. The Urban Forester may require specific construction methods and/or use of aeration devices to ensure the tree's survival and to minimize the potential for root induced damage to the impervious surface
4. To the greatest extent practical, utility trenches shall be located outside of the critical root zone of trees to be retained. The Urban Forester may require that utilities be tunneled under the roots of trees to be retained if the Urban forester determines that trenching would significantly reduce the chances of the trees survival
5. Trees and other vegetation to be retained shall be protected from erosion and sedimentation

#### **7.5 Directional Felling**

Directional felling of trees shall be used to avoid damage to trees designated for retention

#### **7.6 Additional Requirements**

The Urban Forester may require additional tree protection measures which are consistent with accepted urban forestry practices

## Chapter 8

### Tree Planting and Maintenance Standards

#### 8.1 All Projects Except Conversion Option Harvest

Minimum Size and Tree Density Value for Replacement Trees. The required minimum size of the replacement trees shall be pursuant to Table B. Planting Stock – Size Requirements.

**TABLE B**  
**PLANTING STOCK—SIZE REQUIREMENTS**

| DEVELOPMENT TYPE                                       | PLANTING LOCATION                                             | TREE TYPE         | REQUIRED MINIMUM SIZE   | TREE UNIT VALUE |
|--------------------------------------------------------|---------------------------------------------------------------|-------------------|-------------------------|-----------------|
| Residential Subdivision                                | SVPA                                                          | Deciduous         | 1" caliper              | "1"             |
| Residential Subdivision                                | SVPA                                                          | Conifer           | 3' tall                 | "1"             |
| Commercial, Industrial, multi-family (4 or more units) | All developed locations                                       | Deciduous         | 2 "                     | "1"             |
| Commercial, Industrial, multi-family (4 or more units) | All developed locations                                       | Conifer           | 6' tall                 | "1"             |
| Commercial, Industrial, multi-family (4 or more units) | Underdeveloped locations (i.e., woodland, interplanting, etc) | Deciduous         | 1" caliper              | "1"             |
| Commercial, Industrial, multi-family (4 or more units) | All locations                                                 | Conifer           | 3 ' tall                | "1"             |
| Single family and multi-family ( up to 4 units)        | All locations                                                 | Conifer           | 4' tall                 | "1"             |
| Single family and multi-family ( up to 4 units)        | All locations                                                 | Deciduous         | 1.25" Caliper, branched | "1"             |
| Undeveloped property ( Conversion Option Harvest)      | All locations                                                 | Conifer/Deciduous | 2-0 Bareroot Seedlings  | "1"             |

1. Replacement Tree Quality. Replacement trees shall be American Standard for Nursery Stock Grade No. 1 or better and must be approved by the Urban Forester prior to planting.
2. Replacement Trees - Species and Spacing. The species selection and spacing of trees to be planted shall be such that it provides for the eventual mature size of the trees. Soil type, soil

conditions and other site constraints shall be considered when selecting species for planting.

3. Required cultural practices. Trees shall be watered as necessary to ensure establishment, survival and growth, during the first two growing seasons after planting. They shall be mulched with 4 inches deep of composted mulch. Staking and fertilizer shall, only be required where deemed necessary by the Urban Forester.
4. Required Pruning (Deciduous Trees). Pruning shall be performed on newly planted deciduous trees pursuant to the following schedule and standards.
  - Year 1 – Only dead and broken branches shall be pruned when the tree is planted.
  - Year 2 - A Class I prune, pursuant to American National Standard Institute A300 Part 1, shall be performed during Year 2. The purpose of this pruning is to establish one dominant leader and removal of cross branches to allow proper scaffold branching. Identify the lowest permanent branches. In the short term, temporary branches are retained or reduced in length to promote growth and trunk taper development and to protect the trunk
  - Year 3 - The purpose of this year's pruning is to begin establishing permanent tree architecture by considering vertical spacing of scaffold branches. Establish spacing by reducing or removing competing stems or branches. Scaffold selection can take 10 years or more depending on climate, species and location. Continue to raise the crown for road and sidewalk clearance by retaining or reducing the low temporary branches.
5. Required Pruning (Conifer Trees). Conifers benefit from the removal of dead, dying and diseased branches. Late winter or early spring is best. Prune double leaders when planted.
  - Year 1 - Minimal pruning is necessary. Only dead and broken branches
  - Year 2 – Maintain proper soil hydration. Most conifers cannot survive a severe prune. Depending on species, the tree may be pruned to encourage a specific shape.
  - Year 3 – Retain brown areas of old growth as they do not regenerate. Only remove bottom branches when absolutely necessary.

## **8.2 Properties proposing a Conversion Option Harvest**

1. Tree Size. Planting stock shall be minimum 2-0 foot height bare root seedlings. Each planted tree shall be equivalent to one (1) a tree unit.
2. Acceptable Stocking. Stocking levels are acceptable if a minimum of 200 tree units per acre of well distributed vigorous, undamaged trees per acre of the site are established. This includes both the existing trees and the newly planted trees.
3. Species suitability. Species chosen for planting should be suited to the constraints of the site including, but not limited to: soils. Available moisture, topography, light conditions existing and potential disease problems.
4. Timing of planting. The trees shall be planted during the next planting season (October - March)

after the harvesting operation is finished.

5. Competing vegetation. Competing vegetation shall be controlled to the extent necessary to allow establishment, survival and growth of the planted trees. To ensure that competing vegetation is properly controlled the Urban Forester may require the use of mulch, weed control fabric. Tree shelters and/or other measures deemed necessary.
6. Maintenance Requirements. Minimum stocking of the site as established in this chapter, must be maintained. Failure to maintain the minimum stocking as required constitutes a violation of this chapter. Additionally failure to comply with the conditions established in the conversion option harvest plan also authorizes the City of Olympia to reinstate the 6-year moratorium on development as established in Chapter 222-20 WAC.

## Chapter 9

### Mitigation

A significant percentage of parcels undergoing development in the City will have on them some areas of healthy soils, understory vegetation, and mature trees in good condition; areas which can be preserved during and after construction to meet the requirement of a Soil and Vegetation Protection Area (SVPA) and/or required tree units.



*SVPAs are separate tracts of land specifically set aside for the preservation of healthy soil and the preservation or planting of existing and/or native vegetation, including trees.*

However, parcels that don't have existing mature trees or an intact understory ecosystem, or parcels on which unauthorized activities intentionally or unintentionally removed and/or damaged protected vegetated areas, may be required to develop and implement a Mitigation Plan (Plan). Mitigation will serve to meet a project site's required tree density and/or SVPA(s).



*Common unauthorized activities in existing SVPAs or tree tracts include, but are not limited to, removing trees, removing understory vegetation, building structures (i.e., sheds), changing the soil grade, and fencing areas for person use.*

This chapter provides the guidance needed to complete and implement a Mitigation Plan as an element of a Soil and Vegetation Plan (SVP) and required by the Urban Forester per Olympia Municipal Code (OMC) Chapter 16.60.070(E), or to facilitate restoration of a site per OMC 16.60.130(D).

#### 9.1 Mitigation

Mitigation is defined in OMC Chapter 16.60 as:

*The act of restoring, creating, enhancing, or preserving in a naturally occurring ecosystem to generate an increase in environmental functions to compensate for losses due to development or willful or negligent destruction of that ecosystem.*

Mitigation shall primarily include, but is not limited to, the following activities:

- Remediation of compacted soils in areas without existing native soils, groundcover vegetation, or trees and their associated critical root zones
- Removal of invasive species
- Planting of native understory vegetation, or well-adapted drought-tolerant vegetation,

- appropriate to site conditions
- Restoration of existing trees through removal and replacement or restorative pruning; and
- Planting of trees

Mitigation is not intended to compensate for intentional impacts on existing soils, native vegetation, and mature trees. In other words, all intact understory ecosystems and mature trees on a site can't be removed, with mitigation then used to establish required SVPAs. Existing healthy soils, native vegetation, and viable, mature trees have priority for preservation and protection.

## 9.2 Site Selection

For new development projects, identifying the need for mitigation and siting mitigation should occur early in the project design process. Applicants shall take into account where on a project site mitigation will contribute most to achieving the desired functions of a SVPA, particularly if it will be used for stormwater dispersion. The site must also be able to be sustained in perpetuity with a reasonable level of management and have a high likelihood of success beyond the initial establishment period.

Areas on project sites with healthy soils, understory vegetation, and mature trees in good condition have priority for preservation during and after construction to meet the requirement of a SVPA and/or required tree units.

Conditions on sites for which mitigation may be required to establish an SVPA include:

- Inadequate numbers of existing trees
- Trees are inappropriate for preservation
- Poor soils (unsuitable, disturbed, compacted, etc.); or
- Significant invasive species



*“Invasive species” are non-native organisms that are capable of spreading so quickly they can cause economic or environmental harm (OMC 16.60.020)*

### 9.2.1 Site Selection Priorities

When determining where to site mitigation, the following areas shall be utilized in order of priority:

- Within critical area buffers and/or significant wildlife habitat areas
- Existing Soil and Vegetation Protection Areas (SVPAs)
- Stormwater retention/detention ponds;
- Required landscaping areas; and
- Individual building lots

### 9.2.2 Unauthorized Acts

For mitigation in response to unauthorized acts in a tree tract or SVPA, the priority is to restore the cleared or damaged site. The end result shall be a site condition that, to the greatest extent practical, equals the site condition that would have existed in the absence of the violation.

The Urban Forester may allow for an alternative site per the prioritization scheme above if it can be demonstrated that the original site isn't an appropriate long-term location for a restored landscape. Example conditions that warrant consideration of an alternative site include, but are not limited to, concerns about human health or safety, unavoidable conflicts with infrastructure, contaminated soils, or planned future development.

### 9.2.3 Off-Site Mitigation

On sites where there are no appropriate locations for mitigation, or where long-term viability isn't feasible, and as confirmed by the Urban Forester, an applicant may propose off-site mitigation. A proposed off-site location, however, shall meet the same siting and prioritization requirements as on-site mitigation sites.

### 9.2.4 Critical Areas



*Critical areas include drinking water (wellhead) protection areas, important habitats and species, streams and important riparian areas, wetlands and small lakes, and landslide hazard areas (OMC Chapter 18.32 - Critical Areas).*

Mitigation in critical areas associated with new development and mitigation in response to unauthorized activities in critical areas is subject to a different set of standards than those in this Manual; see OMC 18.32 - Critical Areas. Mitigation on marine and freshwater lake shorelines not designated as critical areas may be subject to mitigation requirements per the Shoreline Master Program (OMC 18.20.410). When conflicts between this Manual and OMC 18.32 or the Shoreline Master Program arise, OMC 18.32 and the Shoreline Master Program shall apply.

## 9.3 Mitigation Timing

When practicable, mitigation shall be completed during the fall, winter, or spring seasons. For mitigation associated with new development, mitigation requirements shall be met prior to issuance of a Certification of Occupancy, unless otherwise approved by the Urban Forester.

For sites requiring mitigation in response to unauthorized activities, mitigation activities shall be completed as soon as practicable after the property owner and/or violator are notified of the violation, but no more than six (6) months after issuance of the violation.

### **9.3.1 Stormwater Pollution Prevention (Erosion Control)**

All mitigation sites that are not being reviewed as part of a new development project, and that exceed 7,000 sq. ft. of land disturbance as established in the 2016 City of Olympia Drainage Design and Erosion Control Manual will be required to prepare an Abbreviated Drainage Plan, including a Short-Form Construction Stormwater Pollution Prevention Plan (C-SWPPP). Sites with less than 7,000 sq. ft. of land disturbance are not required to complete a Drainage Plan; however, stormwater runoff must still be managed on site.

## **9.4 Mitigation Plans**

When conditions warrant it, or as determined by the Urban Forester, for a new development project, a Mitigation Plan (Plan) shall be submitted and approved as an element of a project's Soil and Vegetation Plan. Property owners and/or contractors who violate OMC 16.60 or the conditions of a permit issued thereunder shall also be responsible for restoring damaged areas in conformance with a Mitigation Plan.

### **9.4.1 Professional Expertise**

The person completing the Mitigation Plan shall demonstrate sufficient expertise and experience in the design and implementation of mitigation in a lowland conifer-hardwood forest ecosystem. The applicant's professional forester may meet this requirement; however, dependent on the existing site conditions and extent and complexity of the project site, the Urban Forester may require the Plan be completed by a professional with demonstrated expertise in environmental restoration, such as a wetland biologist or restoration ecologist.

### **9.4.2 Required Elements**

A Mitigation Plan shall include two separate elements: a site map and report. Both elements shall inform one another and be in complete alignment. If the Plan is affiliated with a new development project, many of the required elements may already be required pursuant to the applicable SVP checklist.

The site map shall be professionally designed and produced so that it is clear, understandable, and drawn to scale. If necessary, the Urban Forester may require that the locations of certain elements, such as existing trees or proposed tree and vegetation protection fencing, be surveyed.

While the level of detail may vary depending on the size and complexity of a project site, the report is generally comprised of narrative descriptions of the elements listed below, supply and material lists, and applicable details and specifications.

#### **Site Map(s)**

*Existing Conditions (drawn to scale):*

- ☐ Property lines, parcel numbers, and ownership
- ☐ Existing grades, proposed grades, and construction stormwater pollution prevention measures
- ☐ Location and footprint of existing structures, paved and hard surfaces, stormwater facilities, and

any other improvements

- ☐ Limits of construction and the location and footprint of all planned improvements
- ☐ Location of any critical areas or buffers (as defined in OMC Chapter 18.32)
- ☐ Location of soil logs (Soil log locations on Drainage/Grading/Earthwork drawings for a Drainage Control Plan will fulfill this requirement)
- ☐ Tree survey: surveyed locations of perimeters of SVPAs and individual trees to be preserved and protected and their critical root zones
- ☐ Delineate SVPAs proposed for stormwater dispersion (this information can be found on the Drainage/Grading/Earthwork drawings required for a Drainage Control Plan)
- ☐ Location of tree and SVPA protection measures
- ☐ Narrative description and graphic detail of tree and SVPA protection measures (see Chapter 7 for tree, soil, and native vegetation protection standards; may be included on separate notes and details sheet)
- ☐ Distribution of existing vegetation in the area proposed for mitigation

*Mitigation Plan (may be included on a separate site map; shall be drawn to scale):*

- ☐ Location and limits of the area proposed for mitigation
- ☐ Location and extent of proposed soil modifications and graphic details (if applicable; graphic may be included on a separate notes and details sheet)
- ☐ Location, density, size, species, and quantity of landscape trees, street trees, and/or plant material to be installed
- ☐ Graphic details for groundcover, shrub, and tree installation (may be included on separate notes and details sheet)
- ☐ Graphic narrative and/or detail for invasive species removal (if applicable; may be included on a separate notes and details sheet)
- ☐ Trees proposed for removal
- ☐ Trees proposed for restoration
- ☐ Tree density calculations
- ☐ Location of temporary irrigation measures and graphic detail (if applicable; graphic may be included on a separate notes and detail sheet)

## Mitigation Report

*Project Narrative:*

- ☐ Narrative detailing the mitigation project scope and desired outcomes
- ☐ Narrative describing how the proposed mitigation plan will achieve the goals of an SVPA, including stormwater dispersion (if applicable)

*Existing Conditions:*

- ☐ Narrative detailing existing soil conditions, including:
  - ☐ Underlying soils on the site utilizing soil surveys, soil test pits, soil borings, or soil grain analyses (soils report findings from a professional soil scientist for a Drainage Control Plan may be used to fulfill this requirement)
  - ☐ Impacts to soils by the unauthorized activity (if applicable)

- ☐ Potential for soil restoration and compatibility for tree and native vegetation installation
- ☐ Narrative description of existing native vegetation: distribution, species, and condition (if applicable)
- ☐ Narrative description of invasive vegetation: distribution and species (if applicable)

*Proposed Mitigation:*

- ☐ Narrative detailing how the site selection criteria and prioritization scheme were used to select a mitigation site
- ☐ Description of the proposed mitigation site
- ☐ Narrative describing how the mitigation site will contribute to controlling stormwater flow (if applicable; this information can be found in a project Drainage Control Plan)
- ☐ Narrative description and detail(s) for all proposed mitigation activities, including site preparation, vegetation installation and removal, and long-term monitoring and maintenance:
  - ☐ Type, quantity, and distribution of soil amendments or other soil improvements (if applicable)
  - ☐ Location, size, species, quantity, and distribution of invasive species to be removed; methods for removal (if applicable)
  - ☐ Location, size, species, quantity, and distribution of trees and plant material to be installed
  - ☐ Location, size, species, and quantity of trees to be planted off-site, or dollar amount of fees to be paid in-lieu of on-site mitigation (if applicable)
- ☐ Timeline for site preparation, installation, and maintenance activities
- ☐ Cost estimate for the purchase of materials, vegetation installation, and three (3) years of maintenance to support the establishment and long-term success of the mitigation site

## **9.5 MITIGATION STANDARDS**

### **9.5.1 General**

Mitigation projects shall provide functional equivalency or improvement of the landscape functions lost.

1. When feasible, mitigation for purposes of establishing an SVPA(s) shall be consolidated in one area, as opposed to several smaller SVPAs throughout a project site.
2. SVPAs shall be a minimum of fifty (50) ft. in width. Fifty ft. is the minimum width needed to accommodate stormwater dispersion; if not being used for stormwater purposes and site conditions are restrictive, the Urban Forester can approve an alternate design.
3. Whenever feasible, SVPAs shall be sited adjacent to existing preserved and/or natural areas, such as critical areas, critical area buffers, conservation easements, or existing tree tracts or SVPAs on adjacent properties.
4. The design of mitigation sites shall account for current and future surrounding land uses; for example, such considerations may include incorporating crime prevention through environmental design (CPTED) features or maintaining a public view corridor.

5. SVPAs shall not be intended for active or passive recreation; designs shall not incorporate recreation amenities, such as trails, play structures, or benches unless required for a pedestrian/bike transportation connection.

### 9.5.2 Soils and Vegetation

1. All invasive vegetation and/or prohibited plants shall be removed from the project site.
2. If existing soils are healthy and planned to be retained on site, removal of all invasive and prohibited and/or hazardous trees and understory vegetation, root thatch, and non-soil debris from the surface of the soil will be done manually or with equipment that does not compact the soil.
3. All areas to be planted shall be mulched approximately four (4) inches deep with composted or other approved organic material.
4. Prohibited landscape plants shall not be installed as mitigation. (See Appendix A for a list of Prohibited Landscape Plants.)



*Plants on the Prohibited Plant List have characteristics that despite being well-adapted to site conditions, make them invasive, subject to disease, likely to damage infrastructure, or otherwise cause future management issues (OMC 18.36.060(E)(3)).*

5. Mitigation sites shall install native vegetation when site conditions are appropriate for long-term success. When site conditions are not appropriate, well-adapted drought-tolerant vegetation shall be used.



*“Native vegetation” is vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site (OMC 16.60.020).*



*“Well-Adapted Drought-Tolerant Vegetation” is vegetation that is well adapted to current and anticipated environmental conditions in this region, and is not invasive or noxious (OMC 16.60.020).*

6. Trees in SVPAs shall be comprised of at least 60% evergreen species, unless site conditions are not suitable as determined by the Urban Forester.

7. All planting areas shall have plant materials that provide eighty (80) percent coverage within three (3) years.
8. To the greatest extent possible, the planting design shall mimic the surrounding ecosystem's natural successional species palette and distribution patterns, including both understory and canopy vegetation.
9. Plant selections and the site design shall minimize the need for chemical intervention and be low maintenance, and cultural, mechanical, and biological vegetation and pest management.
10. Plants shall be of the size and quality set forth in Chapter 8 (Plant Selection & Installation) of this manual.
11. Plants shall be installed pursuant to the details and specifications in Chapter 8 (Plant Selection & Installation) of this manual.



*Understory vegetation includes shrubs and plants growing beneath the main canopy of a forest, stand of trees, or individual tree; including low-growing vegetation that covers the ground.*

12. All tree and plant material shall meet the minimum size requirements as set forth in Chapter 8.

### **9.5.3 Existing Trees**

1. Existing trees within mitigation project sites shall be retained whenever possible, and shall have priority for retention over planting new trees.
2. Existing trees, in particular medium-aged and mature trees, shall be pruned to maintain optimum health and/or reduce the risk of failure when there is the risk of causing harm to people or property; pruning shall be done pursuant to current ANSI A300 standards.
3. Trees in fair or poor condition, but without risk of harming people or property, shall be retained for purposes of contributing wildlife value to the SVPA. Such trees may be reduced in size for purposes of creating a wildlife snag.
4. All hazard trees that are not able to be converted to wildlife snags shall be removed.



*A "hazard tree" is any tree with a combination of structural defect and/or disease which makes it subject to a high probability of failure, and is within close enough proximity to where persons or property could be harmed or damaged if the tree were to fail (OMC 16.60.020).*

5. The critical root zones of trees that are to remain throughout a construction and mitigation project shall be protected (see Chapter 7 for soil and vegetation protection standards). Protection measures to prevent impacts to a critical root zone may include, but are not limited to, tree protection fencing, removing invasive species manually, and/or laying mulch.



*“Critical root zone” is the area where the tree’s roots are located. This root zone is generally the area surrounding a tree at a distance which is equal to one foot for every inch of tree DBH (Diameter at breast height) (OMC 16.60.020).*

#### **9.5.4 Monitoring and Maintenance**

1. Understory vegetation and trees shall be maintained in a vigorous and healthy condition, free from diseases, pests and invasive plant species in perpetuity.
2. Residential developments containing five units or more, commercial and industrial projects shall be required to post a surety equal to 125 percent of the estimated amount necessary to guarantee the maintenance and replacement of soils, understory vegetation, and trees in conformance with the associated Mitigation Plan for a period of three (3) years from the date the Certificate of Occupancy is issued by the City.
3. Temporary irrigation may be required to be installed and implemented to ensure survival of all retained and new vegetation. For removal areas lacking access to a water system, an alternative watering method may be approved.



*The Stormwater Site Management Plan is a site-specific, comprehensive document that addresses not only the operation and maintenance of structural stormwater system components, but also addresses the management of tree tracts, Soil and Vegetation Protection Areas, vegetation dispersal areas, and low impact development stormwater controls.*

4. Mitigation sites (SVPAs) that will serve as flow dispersal areas for stormwater management shall be included in a Stormwater Facility Maintenance Program. The operation and maintenance agreement contained within requires owners of private stormwater management facilities to conduct routine and non-routine inspection and maintenance of their stormwater system.

## Chapter 10

### Specimen Trees

#### 10.1 Size

Size shall be determined using the methodology developed by the American Forestry Association for measuring champion trees. This methodology as adopted by the Washington Big Tree Program is described in detail in the publication: Washington Big Tree Program, 1994” by Robert Van Pelt, College of Forest Resources, University of Washington, AR-10 Seattle, Washington 98195

- Circumference of the trunk. The circumference of the trunk in inches shall be measured at Breast Height (4.5 ft. from the ground). If the circumference at 4.5 ft. is distorted by low branching etc. then the circumference shall be taken at the smallest reading obtainable below that point.
- Height of the tree. The height in feet shall be measured using standard forestry mensuration equipment (clinometer. etc.)
- Average Crown Spread. The average crown spread is measured in feet. This shall be the average of the spread of the crown at its widest and narrowest points.

One point shall be assigned for every inch in circumference every 1 ft. in height and every four feet' in crown spread.

The size value for specimen tree evaluation shall be the percentage obtained by dividing the point value of the subject tree by the value of the State champion of the species (listed in the Washington Big Tree Program. 1994 book) then multiplied by 4.

- E.g., Subject tree = 200 size points / State Champion (350 points) = 57%
- $57\% \times 4 = 2.85$

#### 10.2 Location

There are four possible location values. They are determined based on the visibility of the tree from the public rights-of-way or other publicly accessible areas of the property. The four locations values are:

1. 100% visible and prominent in the landscape = 3 points
2. At least 75% visible = 2 points
3. Not less than 50% visible = 1 point
4. Not visible = 0 points

Given these criteria, it would be possible to increase the location value of a tree by incorporating it into the design of the site or plat, making it more visible. or more prominent in the landscape. Examples of this would be to design the tree or group of trees into the entry way of a new subdivision, or to incorporate an existing tree or group of trees into the middle of a parking lot at the front of a

commercial building.

### 10.3 Specimen Tree Evaluation - Condition

There are three condition criteria. The condition class of a tree shall be determined using the methodology developed by the International Society of Arboriculture, Specifically described in Table 6-2, Pages 40-41 of the 8<sup>th</sup> edition of International Society of Arboriculture's *"Valuation of Landscape Trees, Shrubs, and Other Plants."*

1. Excellent Condition = 2 points
2. Good Condition = 1 point
3. Fair Condition = 0 points

### 10.4 Cultural Practices

Given these criteria it may be possible for the applicant to increase the Condition Value of a tree by performing necessary cultural practices to the tree. These cultural practices include but are not limited to:

- Pruning, cabling or bracing as needed: mulching, fertilizing, installing irrigation, etc.

### 10.5 Specimen Tree – Tree Density Value

The specimen tree value is determined by multiplying the average of the size, location and condition values times the standard tree density of that tree.

- Standard tree density = 7 tree units
- Size value (75% of state champion) = 3.0
- Location (at least 75% visible) = 2
- Condition (Good) = 1
- Specimen Tree Value =  $\{(3 + 2 + 1) / 3\} \times 7 \text{ tree units} = 14.0$

## Chapter 11

### Landmark Tree Protection

#### 11.1 Olympia Municipal Code Chapter 16.56

##### 16.56.010 Purpose

The purpose of these regulations is to protect landmark trees and to establish a register of these trees. Landmark trees require protection due to their special value in that they are irreplaceable by any means. They may be associated with historic figures, events, or properties; or be rare or unusual species; or they may have aesthetic value worthy of protection for the health and general welfare of the residents of this city.

Therefore, the purpose of this chapter is:

- A. To provide for the preservation and proper maintenance of landmark trees located in this city, to minimize disturbance to the trees themselves, and to prevent other environmental damage from erosion or destruction of wildlife habitat;
- B. To protect the health, safety and general welfare of the residents of this city; and
- C. To implement the goals and objectives of the city's comprehensive plan. (Ord. 5181 §1(1), 1991).

##### 16.56.020 Definitions - *Revised 5/19*

For the purposes of this chapter, the following terms shall have the following meanings:

- A. "City" means the city of Olympia, Washington.
- B. "Director" means the Director of the Public Works Department or the director's designee.
- C. "Landmark tree" means a tree or group of trees designated as such by the city because of its exceptional value to the residents of the city. Value is determined by factors such as
  - 1. association with historic figures, events, or properties,
  - 2. rare or unusual species, or
  - 3. exceptional aesthetic quality.
- D. "Person" means any individual, organization, society, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, governmental agency, public or private utility, cooperative, interstate body, or other legal entity.
- E. "Remove" or "removal" means the act of removing a tree by digging up, cutting down or any act which is likely to cause a tree to die within a period of five years, including, but not limited to, damage inflicted to the root system by machinery, storage of materials, or soil compaction; changing the ground level in the area of the tree's root system; damage inflicted on the tree permitting infection or infestation; excessive pruning; paving with concrete, asphalt or other impervious material within the

drip-line, or any other action which is deemed harmful to the tree.

F. "Qualified professional urban forester" means a professional with academic and field experience that makes that professional a recognized expert in urban forestry. This may include arborists certified by the International Society of Arboriculture.

G. "Advisory board" means the Urban Forestry Advisory Board of Olympia. (Ord. 7187 §3, 2019; Ord. 5181 §1(2), 1991).

#### **16.56.030 Applicability of Chapter**

This chapter shall apply to all land within Olympia's city limits. (Ord. 5181 §1(3), 1991).

#### **16.56.040 Landmark Tree Registration**

Within one year of the enactment of the ordinance codified in this chapter the city shall prepare and thereafter maintain a list of landmark trees within the city limits. The inventory may include a map identifying the location of the trees and a brief narrative description of each landmark tree. The landmark tree inventory shall be prepared and amended at any time following the procedures established below.

A. Nomination. A tree may be nominated for landmark tree status by the property owner, a neighborhood organization, or any person by submitting a map, a photograph, and a narrative description including the location, species, approximate age, and the characteristics on which the nomination is based.

B. Review. The director upon receipt of a nomination shall review the nomination and confer with other city personnel as may be appropriate. Notice of the nomination shall be mailed to the property owner and shall be posted by the city on the subject site for a period of ten days. The director shall inspect the tree, consider public comments, and decide in each case whether or not the tree is to be designated a landmark tree. The city shall place each designated landmark tree on the landmark tree register. In the event the owner of the tree does not approve of its designation as a landmark tree, the nomination will be disapproved.

C. Notification of the Director's Decision. Notice of the director's decision shall be mailed to the property owner and shall be posted by the city on the subject site for a period of ten days.

D. Appeal. Any person may appeal the director's decision to the advisory board. Appeals must be submitted in writing within ten days of the posting of the director's decision.

E. Advisory Board. The advisory board shall hold a public meeting on the appeal within 30 days of receipt of the appeal. At least 10 days prior to the public meeting, the city will mail a notice to the applicant and the appellant, and post a notice at the subject site. The advisory board will make a decision which will constitute a recommendation to the city council. All recommendations of the advisory board will be considered by the Olympia City Council at the next available council meeting.

F. Notification of Registration. Each property owner who has one or more registered landmark trees shall be notified by first class mail of the designation within 30 days of designation.

G. Recording of Landmark Tree Covenant. Each property owner who has one or more registered landmark trees shall execute a landmark tree covenant in a form agreeable to the city. The landmark

tree covenant shall require that the tree be maintained in a manner which is consistent with the provisions of this chapter. The landmark tree covenant shall be recorded by the county auditor. Recording fees shall be paid by the applicant.

H. Duration of Covenant. The landmark tree covenant shall be effective from the date of recording until such a time that a tree removal permit has been issued by the director pursuant to Section [16.56.060](#) of this chapter.

I. Education -- Benefits. From time to time the city may prepare public information programs on landmark trees and provide qualified professional tree care advice to owners of the landmark trees. (Ord. 5181 §1(4), 1991).

#### **16.56.050 Prohibition of Landmark Tree Removal –Requirement Established**

Subject to the exceptions enumerated in Section [16.56.060](#) of this chapter, no person shall remove, or cause to be removed, any landmark tree. (Ord. 5181 §1(5), 1991).

#### **16.56.060 Exceptions**

A. When A Tree Removal Permit Has Been Issued by the City. No landmark tree shall be removed without first applying for and receiving a tree removal permit. The applicant for the permit shall be the property owner or the city.

1. Application. An application for a tree removal permit shall be submitted on a form provided by the city. The applicant must state the justification for removal on the tree removal application.
2. Review. If justification for removal is based upon health of the tree, and a visual inspection by the director cannot establish that the tree is dead, diseased, or hazardous, the applicant shall pay for the city to hire a qualified professional forester to make a determination. If it is determined by the forester that the tree is dead, diseased, or otherwise hazardous and cannot be saved, the director may approve the removal. If the tree is determined to be healthy, or with treatable infestation or infection, the director shall deny the permit.

If justification is due to reasons other than health of the tree, the director shall confer with other city personnel as may be appropriate in evaluating the justification and make a decision within 20 working days from the date of submission of a completed application, unless an extension is authorized by the applicant.

3. Notification. If the director decides that a permit is justified, notice of the director's decision shall be mailed to the applicant and posted by the city on the subject site for a period of ten days, during which no work shall commence. No work shall commence during the notice periods or when appeals are pending disposition.
4. Appeal. The property owner or any person residing or owning property within 300' of the tree may appeal the director's decision to the advisory board, whether that decision is positive or negative. Appeals must be submitted in writing within 10 days of the posting of the director's decision.
5. Advisory Board. The advisory board shall hold a public meeting on the matter within 30 days

of receipt of an appeal. The city will mail a notice to the applicant and the appellant, and post a notice at the subject site for 10 days prior to the public meeting. The advisory board decision will constitute a recommendation to the city council. All recommendations of the advisory board will be considered by the Olympia City Council at the next available council meeting. The city council decision shall be final. No work shall commence during the notice periods or when appeals are pending disposition.

6. Permit for Tree Removal. Any tree removal permit granted under this chapter shall be valid indefinitely. In addition to the permit, the property owner will execute a revocation of covenant in a form agreeable to the city. The revocation of covenant shall be recorded by the county auditor. Recording fees shall be paid by the property owner.

B. To Protect the Public Safety or Public or Private Property from Imminent Danger. The director may issue an emergency tree removal permit in order to protect public safety or private or public property from imminent danger in the event of an emergency or from a hazard tree. The applicant for the permit may be the property owner or a utility company or the city. The city will not remove a tree from private property unless it is declared to be a public nuisance per se (see Chapter [8.24](#)). The property owner will execute a revocation of covenant in a form agreeable to the city. The revocation of covenant shall be recorded by the county auditor. Recording fees shall be paid by the property owner.

1. Emergencies may include emergencies declared by the city, county, state or federal governments. Such emergencies may include a windstorm, mud slide, flood, freeze, dangerous and infectious insect infestation or disease, or other disaster.

2. Hazard trees may include trees that are dying, dead, structurally unsound, or diseased to the point that restoration to sound condition is not practical, or that a disease can be expected to be transmitted to other trees and to endanger their health.

C. To Perform Routine Tree Maintenance. No landmark tree shall have major pruning (removal of over 20 percent of the tree's canopy or disturbance of over 10 percent to the root zone within a 3 year period) without first applying for and receiving a major pruning permit. The owner shall file an application with the director and shall state the reasons for the pruning or disturbance to the root zone, the methods and degree of pruning or disturbance to the root zone, and the time when this is planned to occur. The city adopts the National Arborist Association's standards for pruning and shall evaluate the proposed pruning against said standards. If the plan meets or exceeds said standards, it shall be approved. If the plan does not meet said standards, it shall be denied or modified such that it can be approved. Decisions of the director under this subsection may be appealed to the advisory board. The advisory board decision will constitute a recommendation to the city council. (Ord. 5181 §1(6), 1991).

#### **16.56.070 Enforcement –Penalties**

A. Any person, firm, or corporation who knowingly violates or fails to comply with any term or provision of this chapter shall be deemed to have committed a misdemeanor, and if found guilty, shall be subject to a fine not to exceed One Thousand Dollars (\$1,000), and/or to imprisonment not to exceed ninety (90) days or to both such fine and imprisonment. Each day shall be a separate offense. In the event of a continuing violation or failure to comply, the second and subsequent days shall constitute a gross misdemeanor punishable by a fine not to exceed Five Thousand Dollars (\$5,000) and/or imprisonment not to exceed three hundred and sixty-five (365) days or both such time and imprisonment. Continuing violation shall mean the same type of violation which is committed within a

year of the initial violation.

B. As an additional concurrent penalty, it shall be a civil infraction for a person, firm, or corporation to violate or fail to comply with any term or provision of this chapter. Each day shall be a separate infraction. A person, firm, or corporation found to have committed a civil infraction shall be assessed a monetary penalty as follows:

1. First offense: Class 3 (\$50), not including statutory assessments.
2. Second offense arising out of the same facts as the first offense: Class 2 (\$125), not including statutory assessments.
3. Third offense arising out of the same facts as the first offense: Class 1 (\$250), not including statutory assessments. See also OMC Chapter [4.44](#), Uniform Code Enforcement.

C. Injunction. Any activity conducted in violation of this chapter is declared to be a nuisance per se, and the city may commence a civil suit in any court of competent jurisdiction for an order abating or enjoining the violation.

D. Penalties for Violation.

1. Fees and Replacement. In addition to any penalty provided for in this chapter, and whether or not the city has commenced a civil suit or action for injunctive relief, any person who violates this chapter shall be subject to a civil fee and/or be required to replace the trees. The city may use any reasonable means to estimate the tree loss or destruction of the illegally removed or damaged trees. The fee here created may be collected by an action in any court of competent jurisdiction. The fee shall accrue to the city, and, if necessary, the city may place a lien against the property in the amount of the fee. The city shall place any sum collected in the city tree account, created in Section [16.60.045](#).

a. The civil fee shall be equal to the total value of trees illegally removed or damaged, as computed by the International Society of Arboriculture shade tree value formula.

b. Replacement trees shall be planted pursuant to the director's instructions as to species, quality, size, quantity and location. Replacement trees shall be maintained pursuant to the director's instructions for a period of two years. Failure to maintain the trees according to the director's instructions shall constitute a new and separate violation of this chapter. At the director's discretion, the cost of replacement trees may be deducted from the amount of any civil fee assessed.

2. Revocation of Permits. In addition to other actions, the director may issue a stop-work order or withhold issuance of a certificate of occupancy, permits or inspections until the provisions of this chapter have been fully met. (Ord. 6081 §60, 2001; Ord. 5382 §2, 1993; Ord. 5181 §1(7), 1991).

## **Chapter 12**

### **Public Trees**

#### **12.1 Olympia Municipal Code Chapter 16.58**

##### **16.58.010 Purpose**

The purpose of these regulations is to encourage responsible management of public tree resources within the City of Olympia in a fashion consistent with the goals and policies of the Comprehensive Plan. Because trees growing on public property provide benefits to the greater public at large, they are deserving of greater protection than that afforded to privately owned trees. Proper protection, planting, and maintenance is required to promote tree health and aesthetics; foster species diversity; and to preserve the public tree canopy.

Therefore, the purposes of this Chapter are:

- A. Encourage the planting of new trees and the maintenance of existing trees for all the benefits they provide to the community.
- B. Maintain public trees in a healthy and nonhazardous condition through good arboricultural practices.
- C. Manage trees and vegetation on public property in a manner that represents the best interests of the public.
- D. Encourage a diversity of appropriate species of trees. (Ord. 5827 §1, 1998)

##### **16.58.020 Definitions**

For the purpose of this Chapter certain words and terms are defined as follows:

- A. **Appropriate Tree.** An appropriate tree is a tree suited at maturity for the space which it occupies without creating a hazard to public health and safety.
- B. **City.** City of Olympia
- C. **Climbing Spurs.** Sharp, pointed devices affixed to the climber's leg used to assist in climbing trees (also known as gaffs, hooks, spurs, spikes, climbers).
- D. **Crown Reduction Pruning.** The reduction of the top, sides, or individual limbs by the means of removal of the leader or longest portion of a limb to a lateral no less than one-third of the total diameter of the original limb removing no more than one-quarter of the leaf surface.
- E. **Hazard Tree.** A hazard tree is any tree with a combination of structural defect and/or disease (which makes it subject to a high probability of failure) and a proximity to persons or property which makes it an imminent threat.
- F. **Public Tree.** Trees growing on property owned in fee-simple by the City of Olympia.

G. Specimen Tree Value. An objective evaluation process used to determine the public value of a tree. The evaluation looks at the size, condition, and location of a public tree to determine whether a tree has a significant public value. The procedure for evaluating a specimen tree is identified in the Urban Forestry Manual.

H. Street Tree. Trees growing within the City's rights-of-ways.

I. Topping. Cutting a branch or stem back to a stub or lateral branch not sufficiently large enough to assume the terminal role (also known as heading, stubbing, lopping).

J. Vegetation Management Plan. A plan identifying how vegetation is to be managed on city-owned property.

K. Urban Forester. The City of Olympia's Urban Forester.

L. Urban Forestry Manual. Technical manual outlining Urban Forestry Standards of practice for the City of Olympia. It was adopted by ordinance as part of OMC [16.60](#). (Ord. 5827 §1, 1998)

### **16.58.030 Scope**

The provisions of this Chapter shall apply to the planting, maintenance, removal, and protection of all public trees as defined in this ordinance.

A. Trees on lands managed by the City of Olympia Parks, Recreation and Cultural Services Department. Tree removal, pruning and/or planting in these areas shall be subject to review and approval of the Parks, Recreation and Cultural Services Department.

B. Trees on lands managed by the City of Olympia, for storm water management purposes. Tree removal, pruning and/or planting in these areas shall be subject to review and approval of the Public Works Department.

C. Trees within critical areas as defined in OMC [18.32](#). Tree removal in these areas will be subject to review and approval of the City's Environmental Review Authority. (Ord. 6886 §18, 2013; Ord. 5827 §1, 1998).

### **16.58.040 Tree Planting**

A. Tree planting on City of Olympia Property. Private parties may plant trees on property owned by the City with written permission. To obtain permission the applicant(s) shall:

1. Submit a written request to the City a minimum of thirty (30) days prior to planting.
2. Prepare a tree planting plan identifying the species, size, and location of trees to be planted. The proposed species and locations of trees must be consistent with current and potential future uses of the property as determined by City Staff review.
3. Comply with the standards for planting, contained in the Urban Forestry Manual.
4. Have underground utilities located and obtain approval from any affected utilities prior to planting.

B. Nuisance Tree Abatement. Any planting of public trees that fails to comply with the standards

established in the Urban Forestry Manual is declared a public nuisance and may be abated pursuant to OMC [8.24.030](#). (Ord. 5827 §1, 1998)

#### **16.58.050 Tree Pruning and Maintenance**

A. Pruning public trees. Private parties may have public trees pruned with written permission from the City. To obtain permission the applicant(s) shall:

1. Submit a written request to the City a minimum of thirty (30) days prior to pruning;
2. Identify the trees to be pruned and the specific work to be performed;
3. Pay for all costs associated with the proposed pruning; and
4. Comply with the pruning standards in the Urban Forestry Manual.

B. Topping and climbing trees with spurs prohibited. Topping of public trees is prohibited. Climbing spurs may be used to climb a public tree only if it is to be removed.

C. Insect and disease abatement. The City may prune, spray, or otherwise maintain public trees in order to control infestations of insects or disease or to maintain public safety. (Ord. 5827 §1, 1998)

#### **16.58.060 Tree Removal**

A. Hazard trees - City's authority to remove. The City may remove any public tree determined to be a hazard by the Urban Forester.

B. Contractors require license, insurance, and bond. All tree removal and/or tree pruning work on public property shall be performed by a licensed, bonded, and insured contractor.

C. Public tree removal process. No City trees shall be cut down, killed, or removed for any reason without complying with the following procedure:

1. File an application with the Urban Forester;
2. Procure a permit for removal from the Urban Forester; and
3. Mitigate the loss of the removed tree(s) pursuant to the mitigation section of this ordinance.

D. Public tree removal, when allowed. A tree removal permit is required to be obtained prior to the removal of any City tree by a private party. Such a permit shall be approved only when one or more of the following conditions exist as determined by the Urban Forester:

1. The tree is infected with an epidemic insect or disease for which removal is the recommended practice to prevent transmission to other trees;
2. The tree poses a public nuisance;
3. The tree poses a safety hazard that pruning, transplanting, or other treatments cannot correct;

4. The tree severely interferes with the growth and development of a more desirable tree;
5. Required infrastructure work or improvements would kill the tree or render it a hazard;
6. The removal of the tree is necessary to implement or maintain a vegetation management plan for the area, as approved by the Urban Forester (see standards for developing Vegetation Management Plans); or
7. The removal of the tree(s) is necessary to provide the only reasonable access to adjacent private property.

E. Public tree loss mitigation. Mitigation is required if a public tree is removed, injured, or otherwise damaged by a private party. The mitigation value shall be calculated by the Urban Forester using the formula outlined in the most recent edition of the "Guide for Establishing Values of Trees and Other Plants," published by the International Society of Arboriculture. The mitigation value shall be paid into the City Tree Account, as established in OMC [16.60](#). All or a portion of this mitigation may be met by planting replacement trees on the site.

F. Vegetation Management Plans. When a private party (non-city) requests the removal of a public tree, the applicant shall be required to develop and implement a vegetation management plan for the property. The applicant shall be required to pay all costs associated with the development and implementation of such plan.

The plan shall ensure:

1. Protection of slopes and soil stability on the property;
2. Protection of critical areas as defined in OMC 14. 10;
3. Protection of landmark trees or trees with a specimen tree value of six (6) or greater;
4. City maintenance costs for the property are maintained at or below the current levels, and;
5. Compliance with all applicable federal, state, and local regulations.

The plan should consider:

1. Wildlife habitat enhancement;
2. Species diversity;
3. Aesthetics, and;
4. Enhancement of public views.

The plan may consider:

1. Enhancement of private views.

The Urban Forester may require that the vegetation management plan be prepared by qualified professionals as deemed necessary. (Ord. 5827 §1, 1998).

### **16.58.070 Penalties**

A. It shall be gross misdemeanor for any person, firm, or corporation to knowingly cut down, prune, kill, or otherwise damage any public tree without lawful authority. The penalty for such violation shall be a fine not to exceed One Thousand Dollars (\$1,000), and/or to imprisonment not to exceed ninety (90) days or to both such fine and imprisonment. Each day shall constitute a separate offense. In the event of continuing violation or failure to comply, the second and subsequent days shall constitute a gross misdemeanor, punishable by a fine not to exceed Five Thousand Dollars (\$5,000) and/or imprisonment for not more than three hundred and sixty-five (365) days or both such fine and imprisonment.

B. As an additional concurrent penalty, it shall be a civil infraction for a person, firm, or corporation to cut down, prune, kill, or otherwise damage any public tree without lawful authority. Each day shall be a separate infraction. A person, firm, or corporation found to have committed a civil infraction shall be assessed a monetary penalty as follows:

1. First offense: Class 3 (\$50), not including statutory assessments.
2. Second offense arising out of the same facts as the first offense: Class 2 (\$125), not including statutory assessments.
3. Third offense arising out of the same facts as the first offense: Class 1 (\$250), not including statutory assessments.

See also OMC Chapter [4.44](#), Uniform Code Enforcement. (Ord. 6081 §61, 2001; Ord. 5827 §1, 1998).

### **16.58.080 Variance and Appeal Process**

The administrative process for variances and appeals shall be governed by Chapter [18.66](#) of the Unified Development Code. (Ord. 5827 §1, 1998).

## Chapter 13

### Additional Resources and References

- [Builders Guide to Olympia's Tree, Soil and Native Vegetation Protection and Replacement Ordinance \(OMC 16.60\)](#)
- [Homeowner's Guide to Olympia's Tree, Soil and Native Vegetation Protection and Replacement Ordinance \(OMC 16.60\)](#)
- [City of Olympia Approved Street Tree List](#)
- [City of Olympia Downtown City Tree Map](#)
- [City of Olympia Comprehensive Plan](#)
- [Tree Well with Grate Planting Detail - Poor Soil](#)
- [Tree Well with Grate Planting Detail - Adequate Soil](#)
- [Tree Planting in Planting Strip](#)
- [Street Tree Frame and Grate Details](#)

## Appendix A

### Prohibited Plants

Prohibited Plants are plants that are not allowed to be installed to fulfill vegetation requirements for a new or existing development on private or public property. This includes, but is not limited to planting to meet the following types of landscape requirements:

- Removal and replacements;
- Buffers;
- Restoration;
- Parking lot and perimeter landscaping;
- Street right-of-way\*;
- Stormwater management facilities, including bioswales;
- Soil and Vegetation Protection Areas (SVPA's); and
- Open space landscaping

Prohibited plants that are already established in the landscape and are identified as being on the Prohibited Plant list and invasive, may be required by the Urban Forester to be removed and replaced.

*“Invasive species” are non-native organisms that are capable of spreading so quickly they can cause economic or environmental harm. (Olympia Municipal Code 16.60.020)*

Plants on the Prohibited Plant List have characteristics that despite being well-adapted to site conditions make them:

- Invasive;
- Subject to disease;
- Likely to damage infrastructure; or
- Otherwise cause future management issues. (OMC 18.36.060(E)(3))

Olympia upholds Washington State’s noxious weed control law (Chapter 17.10 RCW). Weeds are separated into classes A, B, or C. Class A weeds must be eradicated or removed entirely throughout Washington State. Control is required for Class B and Class C weeds to prevent their spread. ‘Species of Concern’ are weeds that are aggressive, invasive, and widespread.

This list will be periodically reviewed and updated by the Community Planning and Development Department.

*\*Some trees identified as prohibited Street Trees in Table A.3 may be appropriate and allowed for restoration sites and other landscaped areas.*

## Prohibited Plants List

| TABLE A.1 GROUNDCOVER, SHRUBS, AND GRASSES |                                                |                      |
|--------------------------------------------|------------------------------------------------|----------------------|
| Common Name                                | Scientific Name                                | WA State Designation |
| absinth wormwood                           | <i>Artemisia absinthium</i>                    | Class C              |
| Austrian fieldcress                        | <i>Rorippa austriaca</i>                       | Class C              |
| babysbreath                                | <i>Gypsophila paniculata</i>                   | Class C              |
| big-leaf periwinkle                        | <i>Vinca major</i>                             |                      |
| bindweed (morning glory)                   | <i>Convolvulus arvensis</i>                    |                      |
| bird cherry                                | <i>Prunus padus</i>                            |                      |
| black henbane                              | <i>Hyoscyamus niger</i>                        | Class C              |
| blackgrass                                 | <i>Alopecurus myosuroides</i>                  | Class C              |
| blueweed                                   | <i>Echium vulgare</i>                          | Class B              |
| Brazilian elodea                           | <i>Egeria densa</i>                            | Class B              |
| buffalobur                                 | <i>Solanum rostratum</i>                       | Class C              |
| bugloss, annual                            | <i>Anchusa arvensis</i>                        | Class B              |
| bugloss, common                            | <i>Anchusa officinalis</i>                     | Class B              |
| butterfly bush                             | <i>Buddleja davidii</i>                        | Class B              |
| camelthorn                                 | <i>Alhagi maurorum</i>                         | Class B              |
| cattail, nonnative species and hybrids     | <i>Typha</i> spp.                              | Class C              |
| cereal rye                                 | <i>Secale cereal</i>                           | Class C              |
| common barberry                            | <i>Berberis vulgaris</i>                       | Class C              |
| common catsear                             | <i>Hypochaeris radicata</i>                    | Class C              |
| common crupina                             | <i>crupina vulgaris</i>                        | Class A              |
| common fennel (except bulbing fennel)      | <i>Foeniculum vulgare</i>                      | Class B              |
| common groundsel                           | <i>Senecio vulgaris</i>                        | Class C              |
| common St. Johnswort                       | <i>Hypericum perforatum</i>                    | Class C              |
| common tansy                               | <i>Tanacetum vulgare</i>                       | Class C              |
| common teasel                              | <i>Dipsacus fullonum</i>                       | Class C              |
| cordgrass, common                          | <i>spartina anglica</i>                        | Class A              |
| cordgrass, dense-flowered                  | <i>Spartina densiflora</i>                     | Class A              |
| cordgrass, saltmeadow                      | <i>Spartina patens</i>                         | Class A              |
| cordgrass, smooth                          | <i>Spartina alterniflora</i>                   | Class A              |
| curlyleaf pondweed                         | <i>Potamogen crispus</i>                       | Class C              |
| Dalmatian toadflax                         | <i>Linaria dalmatica</i> ssp. <i>Dalmatica</i> | Class B              |
| dye's woad                                 | <i>Isatis tinctoria</i>                        | Class A              |
| eggleaf spurge                             | <i>Euphorbia oblongata</i>                     | Class A              |
| English (cherry) laurel                    | <i>Prunus laurocerasus</i>                     |                      |

|                                                                   |                                                                   |                    |
|-------------------------------------------------------------------|-------------------------------------------------------------------|--------------------|
| English hawthorn                                                  | <i>Crataegus monogyna</i>                                         | Class C            |
| English holly                                                     | <i>Ilex aquifolium</i>                                            |                    |
| English ivy 'Baltica'                                             | <i>Hedera helix</i> 'Baltica'                                     | Species of Concern |
| English ivy 'Hibernica'                                           | <i>Hedera hibernica</i>                                           | Species of Concern |
| English ivy 'Pittsburgh'                                          | <i>Hedera helix</i> 'Pittsburgh'                                  | Species of Concern |
| English ivy 'Star'                                                | <i>Hedera helix</i> 'Star'                                        | Species of Concern |
| Eurasian watermilfoil                                             | <i>Myriophyllum spicatum</i>                                      | Class B            |
| evergreen blackberry                                              | <i>Rubus laciniatus</i>                                           | Species of Concern |
| false brome                                                       | <i>Brachypodium sylvaticum</i>                                    | Class A            |
| fanwort                                                           | <i>Cabomba caroliniana</i>                                        | Class B            |
| field bindweed                                                    | <i>Convolvulus arvensis</i>                                       | Class C            |
| floating primrose-willow                                          | <i>Ludwigia peploides</i>                                         | Class A            |
| flowering rush                                                    | <i>Butomus umbellatus</i>                                         | Class A            |
| fragrant water lily                                               | <i>Nymphaea odorata</i>                                           | Class C            |
| French broom                                                      | <i>genista monspessulana</i>                                      | Class A            |
| garlic mustard                                                    | <i>Alliaria petioloata</i>                                        | Class A            |
| giant hogweed                                                     | <i>Heracleum mantegazzianum</i>                                   | Class A            |
| goatsrue                                                          | <i>Galega officinalis</i>                                         | Class A            |
| gorse                                                             | <i>Ulex europaeus</i>                                             | Class B            |
| grass-leaved arrowhead                                            | <i>Sagittaria graminea</i>                                        | Class B            |
| hairy whitetop                                                    | <i>Lepidium appelianum</i>                                        | Class C            |
| hairy willowherb                                                  | <i>Epilobium hirsutum</i>                                         | Class B            |
| hawkweed oxtongue                                                 | <i>Picris hieracioides</i>                                        | Class B            |
| hawkweeds: all nonnative species and hybrids of the wall subgenus | <i>Hieracium</i> , subgenus <i>Pilosella</i> and <i>Hieracium</i> | Class B            |
| herb-Robert                                                       | <i>Geranium robertianum</i>                                       |                    |
| Himalayan blackberry                                              | <i>Rubus armeniacus</i>                                           | Class C            |
| hoary alyssum                                                     | <i>Berteroa incana</i>                                            | Class B            |
| hoary cress                                                       | <i>Lepidium draba</i>                                             | Class C            |
| houndstongue                                                      | <i>Cynoglossum officinale</i>                                     | Class B            |
| hydrilla                                                          | <i>Hydrilla verticillata</i>                                      | Class A            |
| indigobush                                                        | <i>Amorpha fruticose</i>                                          | Class B            |
| Italian arum                                                      | <i>Arum italicum</i>                                              | Class C            |
| Japanese eelgrass                                                 | <i>Zostera japonica</i>                                           | Class C            |
| Johnsongrass                                                      | <i>Sorghum halepense</i>                                          | Class A            |
| jointed goatgrass                                                 | <i>Aegilops cylindrical</i>                                       | Class C            |
| jubata grass                                                      | <i>Cortaderia jubata</i>                                          | Class C            |
| knapweed, bighead                                                 | <i>Centaurea macrocephala</i>                                     | Class A            |
| knapweed, black                                                   | <i>Centaurea nigra</i>                                            | Class B            |
| knapweed, brown                                                   | <i>Centaurea jacea</i>                                            | Class B            |
| knapweed, diffuse                                                 | <i>Centaurea diffusa</i>                                          | Class B            |

|                          |                                              |         |
|--------------------------|----------------------------------------------|---------|
| knapweed, meadow         | <i>Centaurea x moncktonii</i>                | Class B |
| knapweed, Russian        | <i>Acroptilon repens</i>                     | Class B |
| knapweed, spotted        | <i>Centaurea stoebe</i>                      | Class B |
| knapweed, Vochin         | <i>Centaurea negrescens</i>                  | Class A |
| knotweed, giant          | <i>Polygonum sachalinense</i>                | Class B |
| knotweed, Himalayan      | <i>Polygonum polystachum</i>                 | Class B |
| kochia                   | <i>Kochia scoparia</i>                       | Class B |
| kudzu                    | <i>Pueraria montana</i> var. <i>lobate</i>   | Class A |
| lawnweed                 | <i>Soliva sessilis</i>                       | Class C |
| lesser celandine         | <i>Ficaria verna</i>                         | Class B |
| longspine sandbur        | <i>Cenchrus longispinus</i>                  | Class C |
| loosestrife, garden      | <i>Lysimachia vulgaris</i>                   | Class B |
| loosestrife, purple      | <i>Lythrum salicaria</i>                     | Class B |
| loosestrife, wand        | <i>Lythrum virgatum</i>                      | Class B |
| meadow clary             | <i>Salvia pratensis</i>                      | Class A |
| medusahead               | <i>Taeniatherum caput-medusae</i>            | Class C |
| multiflora rose          | <i>Rosa multiflora</i>                       |         |
| old man's beard          | <i>Clematis vitalba</i>                      | Class C |
| oriental clematis        | <i>Clematis orientalis</i>                   | Class A |
| oxeye daisy              | <i>Leucanthemum vulgare</i>                  | Class C |
| Pacific rush, nonnative  | <i>Juncus effusus pacificus</i>              |         |
| Pampas grass             | <i>Cortaderia selloana</i>                   | Class C |
| parrotfeather            | <i>Myriophyllum aquaticum</i>                | Class B |
| perennial pepperweed     | <i>Lepidium latifolium</i>                   | Class B |
| perennial sowthistle     | <i>Sonchus arvensis</i> ssp. <i>Arvensis</i> | Class C |
| periwinkle               | <i>Vinca minor</i>                           |         |
| poison hemlock           | <i>Conium maculatum</i>                      | Class B |
| Pokeweed                 | <i>Phytolacca americana</i>                  |         |
| policeman's helmet       | <i>Impatiens glandulifera</i>                | Class B |
| puncturevine             | <i>Tribulus terrestris</i>                   | Class B |
| purple starthistle       | <i>Centaurea calcitrapa</i>                  | Class A |
| Ravenna grass            | <i>Saccharum ravennae</i>                    | Class B |
| reed canarygrass         | <i>Phalaris arundinacea</i>                  | Class C |
| reed sweetgrass          | <i>Glyceria maxima</i>                       | Class A |
| reed, common (nonnative) | <i>Phragmites australis</i>                  | Class B |
| ricefield bulrush        | <i>Schoenoplectus mucronatus</i>             | Class A |
| rush skeletonweed        | <i>Chondrilla juncea</i>                     | Class B |
| Russian olive            | <i>Elaeagnus angustifolia</i>                | Class C |
| sage, clary              | <i>Salvia sclarea</i>                        | Class A |
| sage, Mediterranean      | <i>Salvia aethiopis</i>                      | Class A |
| saltcedar                | <i>Tamarix ramosissima</i>                   | Class B |
| scentless mayweed        | <i>Matricaria perforata</i>                  | Class C |

|                                               |                                   |         |
|-----------------------------------------------|-----------------------------------|---------|
| Scotch broom                                  | <i>Cytisus scoparius</i>          | Class B |
| shiny geranium                                | <i>Geranium lucidum</i>           | Class B |
| silverleaf nightshade                         | <i>Solanum elaeagnifolium</i>     | Class A |
| smoothseed alfalfa dodder                     | <i>Cuscuta approximate</i>        | Class C |
| Spanish broom                                 | <i>spartium junceum</i>           | Class A |
| spikeweed                                     | <i>Centromadia pungens</i>        | Class C |
| spiny cocklebur                               | <i>Xanthium spinosum</i>          | Class C |
| spurge flax                                   | <i>Thymelaea passerina</i>        | Class A |
| spurge, laurel                                | <i>Daphne laureola</i>            | Class B |
| spurge, leafy                                 | <i>Euphorbia esula</i>            | Class B |
| spurge, myrtle                                | <i>Euphorbia myrsinite</i>        | Class B |
| sulfur cinquefoil                             | <i>Potentilla recta</i>           | Class B |
| Swainsonpea                                   | <i>Sphaerophysa salsula</i>       | Class C |
| Syrian bean-caper                             | <i>Zygophyllum fabago</i>         | Class A |
| tansy ragwort                                 | <i>Senecio jacobaea</i>           | Class B |
| Texas blueweed                                | <i>Helianthus ciliaris</i>        | Class A |
| thistle, bull                                 | <i>Cirsium vulgare</i>            | Class C |
| thistle, Canada                               | <i>Cirsium arvense</i>            | Class C |
| thistle, Italian                              | <i>Carduus pycnocephalus</i>      | Class A |
| thistle, milk                                 | <i>Silybum marianum</i>           | Class A |
| thistle, musk                                 | <i>Carduus nutans</i>             | Class B |
| thistle, plumeless                            | <i>Carduus acanthoides</i>        | Class B |
| thistle, Scotch                               | <i>Onopordum acanthium L.</i>     | Class B |
| thistle, slenderflower                        | <i>Carduus pycnocephalus</i>      | Class A |
| variable-leaf milfoil                         | <i>Myriophyllum heterophyllum</i> | Class A |
| velvetleaf                                    | <i>Abutilon theophrasti</i>       | Class B |
| ventenata                                     | <i>Ventenata dubia</i>            | Class C |
| water primrose                                | <i>Ludwigia hexapetala</i>        | Class B |
| white bryony                                  | <i>Bryonia alba</i>               | Class B |
| white cockle                                  | <i>Silene latifolia ssp. alba</i> | Class C |
| wild carrot (except where commercially grown) | <i>Daucus carota</i>              | Class C |
| wild chervil                                  | <i>Anthriscus sylvestris</i>      | Class B |
| wild four-o'clock                             | <i>Mirabilis nyctaginea</i>       | Class A |
| yellow flag iris                              | <i>Iris psuedacorus</i>           | Class C |
| yellow floatingheart                          | <i>Nymphoides peltata</i>         | Class B |
| yellow nutsedge                               | <i>Cyperus esculentus</i>         | Class B |
| yellow starthistle                            | <i>Centaurea solstitialis</i>     | Class B |
| yellow toadflax                               | <i>Linaria vulgaris</i>           | Class C |
| <b>TABLE A.2 TREES</b>                        |                                   |         |
| <b>Common Name</b>                            | <b>Scientific Name</b>            |         |

|                         |                            |  |
|-------------------------|----------------------------|--|
| English (cherry) laurel | <i>Prunus laurocerasus</i> |  |
| English hawthorn        | <i>Crataegus monogyna</i>  |  |
| English holly           | <i>Ilex aquifolium</i>     |  |
| European mountain ash   | <i>Sorbus aucuparia</i>    |  |
| nonnative ash species   | <i>Fraxinus</i> ssp.       |  |
| Norway maple            | <i>Acer platanoides</i>    |  |
| Sycamore maple          | <i>Acer pseudoplatanus</i> |  |
| tree-of-heaven          | <i>Ailanthus altissima</i> |  |
| White poplar            | <i>Populus alba</i>        |  |

**TABLE A.3 STREET TREES**

*Trees located within the street rights-of-way, adjacent to public or private streets (OMC 16.60.020).*

*Typical planting locations include, but are not limited to tree grates, planting strips between the street and sidewalk, and immediately behind the sidewalk.*

|                       |                                |
|-----------------------|--------------------------------|
| Ash                   | <i>Fraxinus</i> sp.            |
| Aspen                 | <i>Populus tremuloides</i>     |
| Bigleaf maple         | <i>Acer macrophyllum</i>       |
| Black locust          | <i>Robinia pseudoacacia</i>    |
| Boxelder              | <i>Acer negundo</i>            |
| Cottonwood            | <i>Populus</i> sp.             |
| European mountain-ash | <i>Sorbus aucuparia</i>        |
| Japanese zelkova      | <i>Zelkova serrata</i>         |
| Little-leaf linden    | <i>Tilia cordata</i>           |
| London plane          | <i>Platanus x acerifolia</i>   |
| Mountain ash          | <i>Sorbus americana</i>        |
| Norway maple          | <i>Acer platanoides</i>        |
| Ornamental cherries   | <i>Prunus</i> sp.              |
| Poplar                | <i>Populus</i> sp.             |
| Purple leaf plum      | <i>Prunus cerasifera</i>       |
| Red alder             | <i>Alnus rubra</i>             |
| Silver maple          | <i>Acer saccharinum</i>        |
| Sweetgum              | <i>Liquidambar styraciflua</i> |
| Tree of heaven        | <i>Ailanthus altissima</i>     |
| Willow                | <i>Salix</i> sp.               |

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