Attachment B

Municipal Code Gap Analysis

TREE AND VEGETATION PROTECTION REGULATIONS (TMC 16.08)

CITY OF TUMWATER

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Title-page image: Tree Canopy taken by II Kern.

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1 Introduction

The City of Tumwater's urban forest provides environmental, health, and aesthetic benefits to the entire community. The urban forest is a dynamic ecological system that includes canopy trees as well as associated understory vegetation on both public and private land. It contributes to the City's character, economic vitality, and a variety of environmental and human health benefits such as reducing urban heat island effects, stormwater management and water quality improvement, erosion reduction, wildlife habitat and biodiversity, improving mental health and wellness, recreation, and mitigating the impacts of climate change. Like many cities in the Puget Sound region, the Tumwater community is faced with the need to support population growth and development while also ensuring environmental sustainability and promoting equity and environmental justice in its policies.

To meet this challenge, the City Council established "Be a Leader in Environmental Sustainability" as one of its Strategic Priorities in the City of Tumwater Strategic Priorities 2021-2026 with the goal of "Develop new approaches to tree preservation and urban forestry management." The City Tree Board, with support from the Community Development Department and community stakeholders, created the Urban Forestry Management Plan (UFMP), which was adopted by City Council on March 2, 2021. To achieve the objectives of the UFMP, the City established review and revision of the City's tree and vegetation preservation code (TMC 16.08 *Protection of trees and vegetation*) as a high priority action (UFMP 2021). In addition, the City will also be looking at other related codes, including TMC 12.24 *Street trees* and TMC 18.47 *Landscaping*, in 2023.

The challenge of municipal code updates for urban forest management lies in the fact that these are complex regional and watershed scale natural systems where regulatory practices differ across local jurisdictions. There are multiple approaches for how to regulate the retention and replacement of trees and vegetation within the urban setting. This includes a growing body of best practices for urban forest management informed by best available science regarding arboriculture[1] and silviculture best practices, urban tree canopy science, critical areas, stormwater management, climate change impacts and adaptation, and sustainable landscape strategies.

[1] Best practices for arboriculture include but are not limited to the American National Standards Institute (ANSI) which are industry consensus standards developed by the Tree Care Industry Association written by the Accredited Standards Committee. ANSI standards cover everything from specific tree care specifications such as pruning and planting to worker safety.

Tree preservation code updates are also informed by the priorities, values, and resources of the community and will therefore need to be tailored to address the needs of specific neighborhoods, business districts, landowners, and existing City resources and balance competing priorities including developing to urban intensities, protecting federally listed prairie species, and providing affordable housing in a geographically constrained area. Furthermore, urban forest types vary by ecoregion and climate type; what may work in eastern Washington cities may not work for the species and habitat types found in western Washington. This Gap Analysis draws from industry best practices, trends in local urban forest management, and regulatory approaches from within the Puget Sound region.

1.1 Methodology

The Watershed Company (Watershed) met with City Staff, Tree Board, and Planning Commission to discuss the current tree and vegetation protection regulations and recently launched a public engagement process to solicit input from external stakeholders. Priorities identified during stakeholder meetings and public comment provided on the Tumwater Urban and Community Forest Online Open House (www.tumwatertreecity.com) coupled with existing code and policy review will inform and guide the tree and vegetation preservation code update process. This Gap Analysis is the first step in reviewing the current regulations and framing discussion topics to be discussed and addressed by the Tree Board, Planning Commission, and City Council. Community members will also have the opportunity for further involvement by participating in public hearings in 2023.

1.2 Plan and Policy Review

Watershed reviewed TMC 16.08 and other city codes that reference tree management including Title 16 *Environment*, TMC 12.24 *Street trees*, and TMC 18.47 *Landscaping*. In addition, Watershed reviewed City and regional planning and policy documents to assess tree protection and management references, identify nexus with the existing tree preservation code, and note opportunities for revision. Those documents include the following:

- 2021 Tumwater Urban Forestry Management Plan
- Tumwater Town Center Street Design Plan
- Design Guidelines for Capitol Boulevard Community Zone
- Capitol Boulevard Corridor Plan
- Tumwater Development Guide
- Tumwater Citywide Design Guidelines

- Tumwater Brewery District Plan
- Tumwater Littlerock Road Subarea Plan

Watershed also completed a jurisdictional code comparison of other Washington jurisdictions within the Puget Sound region with similar land use and urban interfaces that are referenced throughout this document. See Appendix A for a table of findings. Additionally, Watershed staff reviewed other critical City and regional planning documents, including the Tumwater Comprehensive Plan and Thurston Climate Mitigation Plan, to ensure that the tree and vegetation protection code update is aligned with local climate change, sustainability priorities, and the Growth Management Act.

1.2.1 Urban Forestry Management Plan

The goals and strategies that will guide the TMC 16.08 update process are derived from the UFMP. The UFMP guides the stewardship of the urban forest within the City though a series of implementation actions; its core focus is "The Right Tree in the Right Place." The primary goals, objectives, and actions of the UFMP that specifically inform regulatory strategies and the code update of TMC 16.08 include:

Goal 1. Restore and enhance the community and urban forest.

Objective 1.1. Increase canopy cover in the City to expand the community and urban forest.

Action B. Ensure that landscaping regulations provide for the preservation of trees with potential and the planting of new trees and understory when removing existing trees and understory on public and private properties.

Action C. Require appropriate tree planting in new development and redevelopment, by emphasizing proper planning for trees, correct planting techniques, and aftercare that supports the healthy establishment of newly planted trees.

Action E. Support and incentivize the use of large-canopy trees in appropriate areas to provide maximum benefits.

Action F. Promote the use of native tree and understory species on public and private property to enhance desired wildlife habitat in the City.

Objective 1.2. Improve and maintain an optimal level of age distribution and species diversity of trees in the community and urban forest by increasing the use of desirable trees.

Action A. Designate tree species based upon specific purposes and site conditions for each project and maximize the benefits of trees while maintaining species diversity.

Goal 2. Protect and preserve the community and urban forest, which includes trees, understory, habitat, and soils.

Objective 2.1. Use regulatory and non-regulatory approaches to protect and retain the community and urban forest to the extent practicable within the context of necessary growth and development.

Action A. Enforce tree protection regulations to protect healthy existing trees and forested areas and replace on public and private properties.

Action J. Designate, register, and promote heritage trees.

Goal 3. Manage City-owned community and urban forestry resources for maximum benefit.

Objective 3.1. Promote efficient and cost-effective management of the community and urban forest by selecting, situating, and maintaining urban trees appropriately to maximize benefits and minimize hazards, nuisances, hardscape damage, and maintenance costs.

Action B. Develop and enforce design phase and preconstruction coordination protocols to ensure "The Right Tree in the Right Place."

Goal 4. Balance the protection and support of the community and urban forest with other City strategic priorities, which include, in part, providing affordable housing, developing a walkable urban community, economic development, addressing climate change, and protecting endangered species.

Objective 4.1. Update the Urban Forestry Management Plan and supporting regulations regularly and ensure they work in harmony with other City strategic priorities.

Action A. Ensure that mitigation and conservation areas created under an approved Habitat Conservation Plan are exempt from tree preservation regulations.

Action D. Review tree preservation, landscaping, and street tree regulations regularly to ensure that they are working with other City strategic priorities, plans, and regulations, responding to changes in climate, and implementing the Urban Forestry Management Plan.

The UFMP recognizes that there are different community and urban forest subtypes that may require different approaches to tree management based on environmental conditions and land use designations, as described in the City's Comprehensive Plan. Environmental conditions account for the tree species and plant types most appropriate for a site, historic use and conditions, as well as soils, hydrology, and microclimates. Land use accounts for density of development within a subarea. Tree management differs in higher density urban land

developments compared with lower density residential areas or open space and critical areas. The tree and vegetation protection code update aims to integrate these concepts. The complete UFMP can be found at www.tumwatertreecity.com.

1.3 Internal and External Stakeholder Engagement

City and Watershed staff will be facilitating public meetings with external stakeholders between November 2022 and January 2023, collectively called Community Conversations, to educate the public on the tree and vegetation preservation code update and solicit feedback, concerns, and priorities for tree preservation within the City. These will be "hybrid" meetings hosted online, with in-person attendance provided at City Hall as well. An internal stakeholder session with City staff will be conducted in early January 2023 to enlist input from City employees who implement and enforce the City tree preservation code.

Additionally, the City is hosting an Online Open House website to engage community members that are unable to attend the stakeholder meetings. The Tumwater Urban and Community Forestry Online Open House invited all stakeholders to provide public comment and serves as a hub for project updates and background information (www.tumwatertreecity.com). Public comment provided online and during stakeholder meetings will be summarized as an appendix in a final version of this Gap Analysis. Data will be assessed and integrated into the regulations update as applicable and feasible.

1.4 Document Organization

Recommendations for updating the City's existing tree and vegetation protection regulations are provided in Section 2. Potential gaps are identified within each section by topic. Section 3 addresses additional regulatory or urban forest management topics not addressed within the analysis of the existing regulations. The current tree regulations (TMC 16.08) are found in Appendix B.

2 Analysis of Existing Regulations

2.1 Introduction

Section 2 of this Gap Analysis outlines specific recommendations or topics for further research and discussion, and it is organized by subsection of TMC 16.08. The subject regulations (See Appendix B) would benefit from additional subsections by specific topics, particularly within TMC 16.08.050 *Permit required* and TMC 16.08.070 *Standards.* This would provide clarification and improve functionality for greater ease of use and application by the reader.

2.2 Purposes (TMC 16.08.020)

The City may consider updating the purpose and intent of the TMC 16.08 for policy consistency with the adopted 2021 UFMP. Currently there is one Purpose section for the code. This section should include an introductory paragraph that describes the recent UFMP planning efforts and the needs or issues faced by municipalities, developers, and landowners in managing trees in the urban environment. Other informative additions could include:

- Reference UFMP goals and policies that the code implements. Many UFMP elements are captured in the existing Purposes section of TMC 16.08. However, consider updating it to reference UFMP Goal 4 about the need to balance this with other City priorities as listed above.
- Add a statement addressing the City's canopy cover goals and the need for mitigation and consequences of required tree removal during land development, with the goal of enhancing the City's tree canopy to achieve an overall tree canopy cover of at least 39 percent citywide established by the UFMP. Specify that TMC 16.08 supports the canopy cover targets established in the UFMP which vary by land use type across the City (See Figure 1).
- Include a statement that reflects the UFMP's guiding principle of "Right Plant, Right Place" to manage trees and vegetation in accordance with industry standards, best management practices established by the International Society of Arboriculture (ISA) and the American National Standards Institute (ANSI) for Management of Trees During Site Planning, Development and Construction, Pruning, and Tree Risk Assessment.

Two important components of the UFMP are climate change resilience and equity. Consider adding specific language to this code section such as:

(1) Mitigation of climate change through the absorption of greenhouse gases, reducing the heat island effect, and removing air pollutants.

(2) Maintaining and increasing tree canopy and allocating urban forestry resources equitably throughout the City.

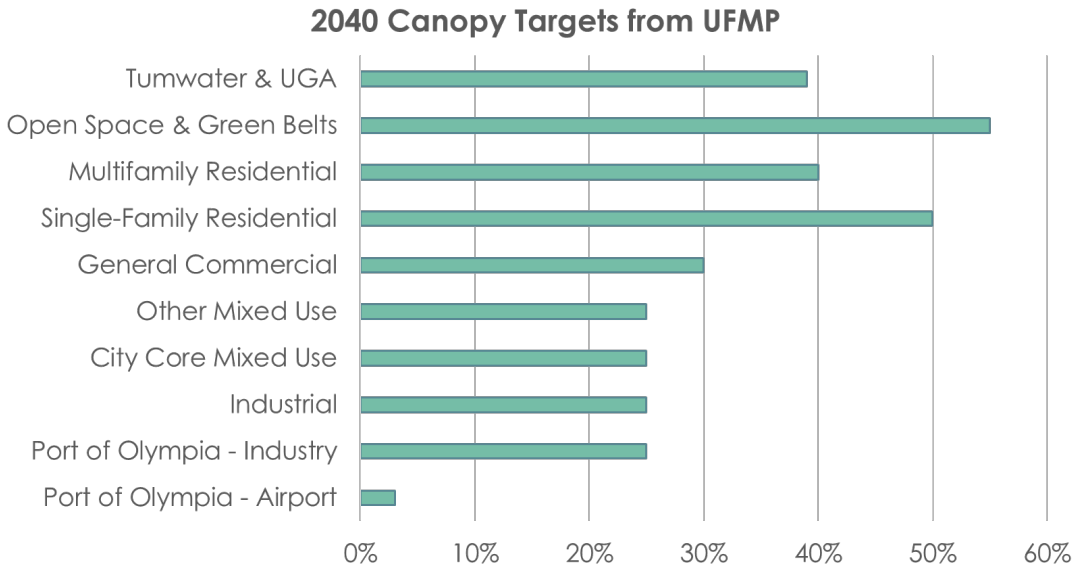

Figure 1. 2040 Canopy Targets by Land Use - Tumwater Urban Forestry Management Plan

2.3 Definitions (TMC 16.08.030)

One goal of this code update is to ensure that the revised regulations are clear and easy to understand. To that end, additional terms are necessary to ensure the regulations are accessible to City planners, industry professionals, and community members. As specific amendments are proposed, additional definitions may be needed to ensure conciseness within the regulations. Furthermore, there may be definitions remaining that are no longer applicable and can be removed. Terms should be removed if not present in the code. Definitions should be crafted to reduce ambiguity and adhere to industry standards, best management practices established by ISA and ANSI. Definitions should also be reviewed for consistency across other chapters of the Tumwater municipal code including TMC 17.04 *Definitions* and TMC 18.04 *Definitions*. TMC 17.12 *General design standards* and TMC 18.42 *General land use regulations* address tree protection areas and should also be reviewed for consistency and updated as needed.

The first term that requires clarification is "tree." TMC 16.08 currently defines a tree as "any healthy living woody plant characterized by one or more main stems or trunks and many branches and having a diameter of six inches or more measured four and one-half feet above ground level..." (TMC 16.08.030(T)). The City should consider refining the definition of trees as "significant" or "regulated." The term "significant tree" is used in TMC 18.47.020(B) but is not used in TMC 16.08 or TMC 12.24. It is important to ensure consistent use of tree designations across all three urban forestry related codes. Other definitions to specify include hazard trees,

groves, hedges, nuisance trees, public trees, street trees, and viable tree (or healthy versus unhealthy tree).

Definitions that relate to each other and appear in the code in different sections include "Tree Protection Professional" and "Qualified Professional Forester." Consider consolidating this definition and using one term throughout the code. Since not all arborists are experienced in tree risk assessment or managing tree protection during construction, consider specifying levels of experience and credentials required beyond the ISA certification. All arborists assessing tree health and safety should be Tree Risk Assessment Qualified (TRAQ). The ISA Tree Risk Assessment Qualification is a specialized certification that ISA credentialed arborists receive additional training in tree health assessments (aka hazard trees).

This code update approach proposes clarifying this definition and strengthening the professional requirement. Example requirements are found in the City of Mercer Island City Code *MICC 19.16.010* or the City of Burien *BMC 19.10.432.* One example from the City of Burien's recent tree preservation code update (*BMC 19.10.432*) reads as follows:

> *"Qualified Tree Professional*
>
> *A qualified tree professional is: An individual with relevant education and training in arboriculture or urban forestry, having the International Society of Arboriculture (ISA) Tree Risk Assessment Qualification (TRAQ) and one of the following credentials:*
>
> 1. *ISA certified arborist;*
> 2. *ISA certified arborist municipal specialist;*
> 3. *ISA board certified master arborist;*
> 4. *American Society of Consulting Arborists (ASCA) registered consulting arborist (RCA);*
> 5. *Society of American Foresters (SAF) certified forester for forest management plans.*
>
> *A qualified arborist must also be able to prescribe appropriate measures for the preservation of trees during land development. Any provision in this title referring to using an arborist or qualified arborist or tree professional or qualified professional shall be interpreted to require using a qualified tree professional."*

It is also important to use consistent terms throughout the regulations as described in the definitions section. For example, "tree plan" is listed in the definitions section but labeled "Tree Replacement Plan" in TMC 16.08.050 *Permit required* and TMC 16.08.072 *Maintenance requirements*. Consistent terminology throughout the regulations and other chapters of the municipal code will help City staff when assisting developers, homeowners, and other

customers. For example, TMC 14.08 *Approval, review and appeal authority* should also be reviewed as it includes Table 14.08.030 which defines the process for reviewing, approving and appealing tree plan applications.

Additional recommended definitions include but are not limited to the following:

- Caliper
- Crown
- DBH (Diameter-At-Breast-Height)
- Approved And Prohibited Plant List
- Pruning
- Tree Protection Zone (TPZ)
- Covenant
- Right Of Way (ROW)
- Forest Practices
- Maintenance/Performance Bond

Other items that need to be addressed include Forest Practices terms listed in the definitions section that do not appear directly in TMC 16.08, but they may be defined in a related code. For example:

- Conversion option harvest plan (COHP). This definition pertains to TMC 16.08.038 *Forest practice applications*.
- Class IV Forest Practices and other key terms with a reference to the definitions section of Revised Code of Washington (RCW) 76.09.

2.4 City tree protection professional (TMC 16.08.035)

The description and role of the City Tree Protection Professional could be clarified. For instance, does the City contract with the tree protection professional primarily to support the Community Development Department's permit review and ensure that tree inventories, replacement, and protection plans meet standards? This section assumes the reader already understands the role permitting and review process and role of the tree professional. If this is intended to serve as a general definition, consider moving this to the definitions section. The following information could be added here as applicable:

The City tree protection professional is a City or contract employee who conducts the Community Development Department's urban forestry review of land clearing applications including the arborist report, tree protection and replacement plans, forest management plans, and accuracy of site plans to ensure consistency with City tree and development codes. The City tree protection professional may also verify hazard tree assessments for non-permitted tree removal requests.

2.5 Forest practice applications (TMC 16.08.038)

The forest practices section would benefit from further explanation to put the provisions of *RCW 76.09.070* in the context of the City's Comprehensive Plan and development within the City. This section could include an introduction or intent section that refers the reader to Objective 2.4 of the UFMP. Suggested language can be found in the City of Lacey tree protection and preservation code LMC 14.32.045 *Class IV Forest practice applications*. The Lacey code section outlines rules regarding the Urban Growth Area and *RCW 76.09.070*, guidelines for conversions and timing; provisions for maintenance and thinning; and jurisdiction for processing of applications. Also, consider providing an FAQ or additional information to landowners on the City's website.

2.6 Tree account (TMC 16.08.040)

The existing Tree Account was established for the purposes of "acquiring, maintaining and preserving wooded areas, and for planting and maintaining trees within the City." All fines collected for violations of the regulations are deposited into this account and the funds are used to plant trees on City-owned property or easements.

In keeping with the City's aim to integrate equity into its urban forest management practices, consider expanding use of the account to prioritize tree planting efforts where tree canopy goals fall short of the City's established canopy cover goals. The City could consider developing a homeowner tree give-a-way program that provides trees to be planted on private land and adjacent rights of way in specific neighborhoods or zone districts as needed to achieve equity and canopy cover goals outlined in the UFMP. Consider expanding this section to support potential future opportunities. The City of Burien provides for this in *CH 19.26.100 Tree replacement* in their 2022 regulations update. The following suggested language is based on the City of Burien code:

Tree account funds may be used for the City's urban forestry initiatives to achieve the objectives of the Urban Forestry Management Plan and the Thurston Climate Mitigation Plan including but not limited to forestry education, restoration activities, the purchase of land for the purpose of reforestation or preservation, the planting of individual trees, funding a tree give-away program, purchase, and installation of infrastructure to preserve existing trees and protect new trees, funding

for future monitoring efforts, and/or for enforcement of this chapter. Tree account monies may also be used for off-site replacement plantings at city-owned parks, public street rights-of-way, and other public or private open spaces. All trees to be replaced offsite shall meet the replacement standards of this section.

2.7 Permit required – Applications – Requirements – Processing – Conditions of issuance (TMC 16.08.050)

2.7.1 User Guide – New Section

To improve usability and clarity of the permitting provisions, consider creating an introductory "user guide" to TMC 16.08.050. The user guide summarizes when a permit is needed, the required elements of the permit submittal, the review process and timeline, and conditions of issuance. Examples of user guide sections from other jurisdictions can be found in Burien Municipal Code *(BMC) 19.26.010* and Kirkland Zoning Code *(KZC) 19.40.*

2.7.2 Permit Types and Requirements

The existing regulations apply to private property outside of critical areas, critical area buffers, and shoreline management areas.[2] The current regulations require a land clearing permit for any land clearing that involves tree removal in the City. The requirements for land clearing permits do not differentiate between large-scale land clearing for the construction of a single-family home, multifamily, or commercial development versus smaller scale tree removals on lots with existing development. If amendments are approved for land clearing permits, the City will need to review TMC 14 *Development code administration* and TMC 15.44 *Vesting of development rights* to ensure the new permitting requirements work with other approvals. TMC 16.08 does outline additional requirements or considerations for "timbered" properties and addresses forest practice applications for processing of Class IV applications per RCW 76.09.240.

The City could consider designating specific permit requirements based on the type of associated land clearing activity. As an example, the Cities of Kirkland (KZC 95.25 and .30) Burien (BMC 19.26.060 and .070), and Mercer Island (MICC 19.10.050 and .060) have provisions for tree retention, removal and replacement based on whether they are associated with development, with different permit submittal requirements. The City could consider creating criteria for (1) tree removal on private property, not associated with development (aka minor permits or tree removal permits) and (2) tree removal associated with large scale land clearing in preparation for a development project (aka major permits).

[2] The project team will not make amendments to the Critical Areas Ordinance or the Shoreline Master Plan as part of this ordinance update but may suggest future amendments to consider in the future.

TMC 16.08 outlines specifications for timbered property greater in size than one acre or commercial property with more than fifteen trees (TMC 16.08.050(D)). The City could also consider having a specific designation for tree removal on wooded property over a certain acreage that is being managed for forest health or timber versus development.

Adding more specificity to the permitting types and requirements as described above could allow the City to streamline the permitting process and more efficiently allocate staff resources for small-scale permit review versus large-scale development projects. This could also aid in enforcement of the code and aid in monitoring short- and long-term trends in tree removal types and processes.

Some Puget Sound jurisdictions provide applicants with a permitting checklist to ensure the applicant provides all required information for a complete permit application. This is more an internal programmatic recommendation versus a code recommendation but could be a useful tool for implementing code requirements and permit review. The City of Kirkland has a *Tree Removal Permitting Guide* on the City website to help applicants navigate their tree code.

2.7.3 Report and Site Plans

TMC 16.08.050 establishes permit submittal requirements that includes a report with a site plan, tree protection plan, and tree replacement plan. The report must describe existing environmental site conditions, property boundaries, location of proposed clearing, and a tree inventory and have tree protection and tree replacement plans drawn to scale. Each of these components would benefit from some clarification. The City could refine this by breaking out the data required on the 'to-scale' site plans versus a detailed arborist report that provides a narrative description of tree conditions, vegetation, and recommendations following best management practices. The report would supplement what is graphically depicted on the site plan. Recommended site plan requirements could include:

(1) Name, address of the applicant and owner of the property

(2) Legal description of the property

(3) Date, north arrow, and scale

(4) Topography showing contours not greater than ten-foot intervals of proposed clearing projects.

(5) Boundary of critical areas such as wetlands, steep slopes, creeks, and shorelines.

(6) Location of proposed improvements and needed excavation including but not limited to existing structures, new structures, additions to existing structures, appurtenances,

accessory structures, storm drain structures, utilities, driveways, and any required yard setbacks or perimeter buffering as defined under the City landscaping code.

(7) The location, type, size, inventory tree number (if feasible/applicable), dripline, and critical root zone (CRZ) of regulated trees and groves and the location and type of other vegetation to be preserved/removed.[3] Those regulated trees proposed for removal should be marked with an "X" or ghosted out on the plan set for ease in permit evaluation.

(8) The tree protection and replacement plan details (discussed below in Section 4.7.4 of this report) should be included in the final site plan submittal (This is already noted in TMC 16.08.050(C)(5)(e)).

TMC 16.08.050(D) states, "…the code administrator may modify the submittal requirements of subsections C and D of this section, on individual applications where the information is not needed or is unavailable." The City should consider refining the administrative process and outlining what types of alternative documentation would be applicable. This topic could also be consolidated with or reference TMC 16.08.090 *Alternative plans*.

2.7.4 Arborist Reports

TMC 16.08.050 establishes the requirement that applications for land clearing permits be accompanied by a "report" that includes many of the above-mentioned components such as a tree inventory, tree protection plan, and tree replacement plan, a timeline for implementing protection and/or replacement.

The "report" could be retitled "arborist report" with the requirement that it be completed by a certified professional arborist or forester as defined in the definitions section of TMC 16.08. Due to tree growth and changes in environmental conditions over time, specify that the report must have been completed within the last three years. In addition to the current requirements listed in TMC 16.08.050(C), the report should include the following information:

(1) A map showing the location of existing regulated trees on the subject property *and* trees on adjacent properties whose CRZs extend into the subject property. When feasible/applicable, trees should be labeled by inventory number within the report that

[3] The Critical Root Zone (CRZ) is the area encircling the trunk of f tree equal to one foot radius for every inch of DBH. Example: a 24-inch DBH tree has a 24-foot radius CRZ measured from the face of the trunk. The dripline is the distance from the tree trunk that is equal to the furthest extent of the tree's crown and is typically measured in al four cardinal directions (north, south, east, west). Depending on the tree species and canopy shape, the CRZ will sometimes extend beyond the tree's dripline.

is consistent with the site plan so the arborist report can serve as a reference when evaluating permit applications.

(2) A tree viability rating based on the overall health and structure of on-site regulated trees and estimated condition for off-site trees that may be impacted by construction or land clearing activities. Ratings should be based on the most recent edition of the *Guide for Plant Appraisers* written by the Council of Tree and Landscape Appraisers (CTLA) and published by ISA (CTLA 2020) (See Table 1).

(3) Identification of groves or tracts of trees suitable for protection based on the topography, tree species, tree health, soil types, and project design limitations.

(4) The feasibility of retaining regulated (aka significant) trees based on existing conditions and proposed development, including but not limited to new structures, additions to existing structures, appurtenances, accessory structures, utilities, and driveways.

(5) Provide a summary of best practices and specifications for tree and soil protection measures. This includes the placement of construction fences, recommended on-site monitoring during construction activity (including areas of ingress/egress to the site), and tree protection measures based on ISA's current edition of *Managing Trees During Construction*.[4]

Should the City consider using minor versus major tree removal permit application types, the requirements and review process for minor tree removal not associated with development could be adjusted. For example, the minor permit could require a different application form accompanied by a minor site plan or aerial photograph showing the approximate location of regulated trees, clearly designating which trees are to be removed and retained. A planting plan would still be required for replacement plantings but would not necessarily require the more detailed site plan of a development project.

[4] ISA's *Managing Trees During Construction* is a companion publication to the ANSI A300 Part 5: Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction).

Table 1. Assessment of plant condition considers health, structure, and form. Each may be described in rating categories that could be translated into a percent rating (CTLA 2020) as shown in this table or listed as 'viable' or 'nonviable'. Having clear documentation of assessment data will assist the City in urban forestry evaluations of permit applications.

Rating Category	Condition Components			Percent Rating
	Health	Structure	Form	
Excellent - 1	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation.	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	81% to 100%
Good - 2	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.	61% to 80%
Fair - 3	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may compromise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.	41% to 60%
Poor - 4	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.	21% to 40%
Very Poor - 5	Poor vigor. Appears dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	6% to 20%
Dead - 6				0% to 5%

2.7.5 Tree Protection and Replacement Plan

2.7.5.1 General Provisions

TMC 16.08.050(C)(5) *Tree protection plan* and TMC 16.08.050(C)(6) *Tree replacement plan* may require revision as needed to integrate other code provisions as part of this update, add clarity for the reader, and strengthen tree protections by outlining detailed requirements that are readily enforceable.

The Tree Protection and Replacement Plans should include the CRZ of all significant trees as well as the location of protected tree groves as defined in the code. The CRZ is also referred to as the tree protection zone (TPZ). Although the CRZ can be estimated by looking at the drip line of a tree, the CRZ typically extends beyond the boundary of the dripline. Should the City decide to regulate tree retention based on canopy cover by parcel, the tree protection plan should also indicate the proposed retained canopy cover on the parcel as a percentage of the total lot square footage (See section 2.10.3 for further discussion of tree retention standards).

2.7.5.2 Tree Protection Detail and Signage

The City could consider providing applicants more detailed requirements for tree protection. This could include an approved checklist and diagram to be provided to applicants at the pre-submittal meeting and then used by permitting staff to evaluate applications and conduct fencing inspections on development projects. The tree protection detail should provide for protections of trunk, canopy, and the critical root zone and include specifications for the type and location of fencing, treatment of roots exposed during construction, prohibition of stockpiling materials, vehicular traffic, or storage of machinery within the fencing area, and fencing signage requirements. The City may consider providing a TPZ engineering detail with instructions for contractors within the Tumwater Development Guide. Example details and best practices from other Puget Sound jurisdictions or industry professionals can be found on the following websites:

- International Society of Arboriculture (Tree Protection (isa-arbor.com))
- City of Mercer Island (Tree Protection During Construction)
- City of Kirkland (Tree Fencing)

2.8 Performance and maintenance bond may be required (TMC 16.08.060)

There are no significant recommended revisions to this section. However, the City may add clarification that "all bond releases or assignment of funds returned to the applicant shall be approved in writing by the community development director."

2.9 Standards (TMC 16.08.070)

2.9.1 Organization

TMC 16.08.070 requires reorganization and use of subheadings to improve clarity and conciseness. Specific provisions would benefit from subheadings including but not limited to the following:

- Management of public trees
- Tree retention standards
- Tree replacement standards
- Tree protection details and fencing
- Approved and prohibited tree lists
- Critical areas and their buffers
- Erosion control and soil protection requirements
- Stormwater management
- Schedule and timing
- Nuisance trees
- In lieu fee requirements
- Commercial tree farms

2.9.2 Tree Protection Designations

Like many jurisdictions within the Puget Sound Region, the City's code currently regulates trees greater than or equal to six-inch DBH as well as Heritage Trees as defined in TMC 16.08.075. Some jurisdictions also have protections for large diameter trees based on their DBH often referred to as Landmark or Exceptional Trees. The threshold for Landmark or Exceptional trees varies across jurisdictions but is typically equal to or greater than 24-inch DBH (See Appendix A - Edmonds *EMC 23.20*, Shoreline *SDC 20.50.360*, and Kirkland *KZC 95*). The City

may consider creating a Landmark Tree designation to protect both large diameter trees and groves.

2.9.3 Tree Retention and Replacement Standards

The tree retention standards found in TMC 16.08.070(Q) state, "…not more than thirty percent of the trees on any parcel of land shall be removed within any ten-year period, unless the clearing is accomplished as part of an approved development plan." On parcels not associated with development, a 1:1 tree replacement ratio is required when the retention standard is not met. TMC 16.08.070 (R) states that with a development proposal, a minimum of 20% of trees shall be retained with a 3:1 replacement ratio when the retention standards are not met. The introductory section includes language directing applicants to "leave healthy dominant and codominant trees well distributed throughout the site." TMC 16.08.070(R)(1), which outlines the required size, type, and condition of retained trees, lacks detailed specifications, protections, or incentives for large size classes except for the City's existing heritage tree designation.

2.9.3.1 Quantifying Retention and Replacement Standards

To determine the level of tree retention and replacement requirements, cities and counties throughout the Pacific Northwest and the United States use different methodologies. Commonly used strategies or approaches for quantifying tree retention and replacement include (1) a tree credit or density approach and (2) a canopy cover approach. Within these strategies, there is variation in application and implementation based on other City development and landscaping codes, community priorities, and City programmatic and staffing resources. Each of these methodologies has cost implications to the City and the applicant, which vary based on the level of in-house urban forestry staffing and the rigor of review requirements established in the City's tree preservation code.

Tree density consists of existing trees, replacement trees, or a combination of both. Tree density credit models are similar to a timber stocking level that quantifies density based on the trunk diameter (DBH) of existing trees. This is considered a general indicator of tree size and canopy cover over time. Parcels within the City or specific land use zones will then have specific minimum tree density credits that must be met. During the permit review, the existing tree credits are calculated based on trees retained versus removed. Tree credit methods are commonly used due to the ease of data collection regardless of expertise - does not require access to aerial imagery or online data sources and trunk size is easily quantifiable. In addition, tree diameter by species can be used as a correlate for canopy, age, and ultimate size when assessing retention values for specific species. Other Puget Sound jurisdictions that use variations of the tree density credit approach include Olympia, Burien, Kirkland, and Woodinville (See Appendix A and Reference section for link to City codes).

Another metric for tree retention standards used by the Cities of Edmonds (EMC 23.10) and Shoreline (SMC 20.50.350) is by measuring the percent of significant trees (six-inch DBH or greater) retained in the developable area of a parcel. Edmonds specifies minimum percent requirements based on the type of development (e.g., new single family, short subdivision, multi-family, or unit lot subdivisions) (See Appendix A).

Another methodology used to set minimum tree retention and replacement standards is the "canopy-based approach." This approach is currently used by the City of Lake Forest Park (See LFPMC 16.14.070 *Tree permit approval criteria and conditions*). Tree canopy coverage is determined by measuring the canopy provided by existing trees to be retained as well as the projected canopy coverage provided by newly planted trees (at 30-year mark). Another example of this approach can be found in the Snohomish County Code (SCC 30.25.016 T*ree canopy requirements*) which specifies required tree canopy cover based on the type of residential development within the urban growth area. A lot's canopy coverage would be calculated by the City's qualified arborist or designee (e.g., on-call consulting arborist) for all permits requiring arborist review. Canopy cover goals are established for parcels within land use types (e.g., single-family, multi-family, and commercial). If the City chose to explore this methodology, minimum parcel level canopy retention requirements could be established based on the canopy cover goals per land use established in the UFMP. The challenge to this approach is in using projected future canopy of a newly planted sapling to calculate the anticipated tree replacement and the need for professional qualified arborists to conduct the calculations.

Each of these methodologies has cost implications to the City and the applicant, which vary based on the level of in-house urban forestry staffing available to review permit applications and the rigor of review requirements established in the City's tree preservation code. The City could consider using a hybrid approach that sets minimum canopy requirements on parcels within a specific land use while prioritizing protections for trees of specific species (e.g., native conifers) and size classes (Landmark or Exceptional trees).

2.9.4 Tree Replacement Standards

The City's current tree preservation code requires a 1:1 replacement ratio on parcels not associated with development, when the retention standard is not met (TMC 16.08.070 (Q) and (R)(4)). Per TMC 16.08.070 (R)(3), on sites with an associated development proposal, a 3:1 replacement ratio is required when the standards of the chapter are not met.

The code states that replacement trees must consist of seedlings of the same or similar species to those trees removed, which shall be at least two years old. Where the standard is waived or modified, applicants are expected to plant a minimum of three trees for each tree cleared in excess of the standards established in the TMC 16.08.

The approach to tree replacement standards will be driven in part by the City's approach to establishing and quantifying minimum tree requirements. Ideally, tree retention and replacement standards should be structured based on the size (DBH) and species of the trees removed to ensure that for example if an 18-inch diameter western redcedar is removed, it is not replaced by a deciduous ornamental cherry that will not replace the ecological values provided by the conifer even at maturity. If replacing in kind is not feasible due to design or development constraints, then a combination of on and off-site planting should be required – with species appropriate to the conditions be planted on-site and off-site planting of larger canopy trees be located at another appropriate location. Although there would still be a temporal loss in canopy cover, the goal is that eventually the canopy and the ecological value will be at some point replaced. For example, the City of Edmonds requires a 1:1 replacement for each significant tree between six and ten inches DBH removed; two trees for significant trees between 11 and 14 inches DBH removed; and three replacement trees for significant trees removed between 14 and 24 inches DBH removed (See Appendix A).

In terms of the specifications for replacement plantings, most jurisdictions use size (caliper and/or height) versus age, which the City currently requires. Typically, the minimum size for replacement trees is 1.5 to 2-inch caliper for deciduous trees and 6 to 7 feet in height for conifers.

2.9.5 Tree Species Selection, Location, and Quality

The current City code references species selection and preferences in various sections. Willow, cottonwood, and poplar trees are identified as nuisance species due to the invasive quality of their root systems and are excluded from tree retention calculation standards (TMC 16.08.070(R)(1)(b)). These are also included on the list of prohibited trees. The City also has a list of trees not allowed in public rights of way to minimize impacts to sidewalks and other infrastructure conflicts. The City may consider expanding its prohibited tree list to include trees known to be invasive in natural areas and open spaces such as English holly (*Ilex aquifolium*), which can create dense thickets – especially in upland forests of Western Washington, outcompete native vegetation, and is on the monitor list with the Washington State Noxious Weed Board (WANWCB).

The City should consider strengthening the location, species, and quality requirements for retention and replacement trees:

1. Location - This code update approach proposes adding more specificity to the location of replacement trees when on-site replacement planting is not feasible. Although the City's average urban tree canopy coverage is 39%, tree canopy cover is less in more heavily developed areas such as mixed use, industrial, and commercial zone districts. Loss of canopy cover in more urbanized neighborhoods has implications for stormwater

management, shading and cooling, property values, and livability. To minimize future canopy losses in a specific land use zone, the City should prioritize, whenever feasible, that replacement trees be planted in the same zone in which they were removed. Replacement tree planting locations should include developments with high rates of impervious surface coverage to reduce the heat-island effect in these areas. The City should also specify that adjacent street trees and frontage improvements associated with development, should not count towards the canopy cover/retention credits on private property associated with a development project.

2. Species – The retention and replacement of native conifers (or other conifer species as approved by the City arborist) should be prioritized. Conifer species such as Douglas fir and western redcedar would ideally be retained or replaced in kind. Native deciduous trees (e.g., black cottonwood and red alder), small ornamental trees, and fruit trees, though valuable canopy, do not offer the same level of year-round ecosystem service benefits that conifers provide in Western Washington.

3. Quality – The quality or health of a retained tree should be included as a criterion when developing a tree retention plan. Trees in severe decline or that have been deemed a hazard by a Tree Risk Assessment Qualified (TRAQ) arborist should not be included in the canopy cover calculation/tree credits of a specified development. The City should develop specific tree health/hazard thresholds based on the International Society of Arboriculture tree assessment standards as noted in section 2.8.4 of this report.

2.9.6 Preferred Tree List and Education Materials

Growing healthy full-sized canopy trees in the built environment requires careful consideration of optimal growing conditions by species, proper planting practices, and protection of infrastructure (e.g., buildings, utilities, driveways, sidewalks, fences). To achieve this the City has developed an Approved Tree List (Approved Street Tree Species | City of Tumwater, WA) primarily for street trees directed to commercial, industrial, and residential development projects. The City could expand this list to provide homeowners and other landowners with "Right Tree, Right Place" guidance on preferred and prohibited tree species and planting practices aligned with planting specifications outlined in TMC 18.47 *Landscaping*.

Additionally, species selection and recommendations should be informed by current trends in the region's changing climate. The University of Washington Climate Impacts Group predicts that Western Washington will likely see increasingly drier conditions and higher temperatures during the summer months, with potential increases in precipitation during the winter months. This increases stressors on urban trees such as drought, insect, and tree disease outbreaks. As the City develops its preferred tree lists and resources, species should be prioritized that

perform well under summer drought conditions and outline best practices for tree installation and establishment. The City should reference this resource in the applicable tree protection, landscaping, and development codes as well as provide access on the City's urban forestry website.

Example planting resources and tree lists include the Seattle Department of Transportation's Approved Street Tree List and City of Kirkland tree lists and homeowner education materials, both of which are linked in the References section for further consideration.

2.9.7 Critical Areas

Land clearing in wetlands and fish and wildlife habitat areas is regulated under TMC 16.28 and 16.32, respectively. Land clearing and tree removal are not explicitly called out as an allowed use or activity in TMC 16.08, nor are they identified as a prohibited use. The City should consider adding the provision that "no trees or ground cover shall be removed from critical areas or their buffer unless the proposed activity is consistent with the critical area standards" (Example language from City of Shoreline, SMC 20.50.350(A).

2.9.8 Management of Public Trees

The City should consider adding a subsection specific to the protection and management of public trees and forests. Provisions for street trees would reference TMC 12.24 *Street trees*. TMC 16.08 could include added direction for trees within unimproved rights-of-way, public parks, and natural areas (not regulated by the critical areas regulations). This should include restrictions on pruning, topping, and tree removal by private landowners who live adjacent to public land that are under the purview of the City maintenance department. This section could also outline provisions for when community stewardship of publicly managed trees is supported.

2.10 Maintenance requirements (TMC 16.08.072)

The maintenance requirements section may require restructuring depending on the revision direction taken for any new permitting requirements of the regulations. The current regulations require a maintenance agreement be in place for three years from the date of the final plat or the date the trees are planted. One question to address is whether the maintenance agreement applies to those trees planted off-site when onsite replacement is not feasible. The City may also consider whether maintenance agreements of required trees and tree protection open spaces within homeowners' associations are sufficient or need refinement.

2.11 Heritage trees designated (TMC 16.08.075)

The heritage tree designation could benefit from additional detail to provide a more detailed framework for how the City evaluates heritage trees in addition to other tree designations as discussed in Section 2.9.2 of this report. This section references a "tree removal permit" but does not specify the specific requirements compared to the land clearing permit. Permit requirements related to heritage tree removal should be specified here.

2.12 Exemptions (TMC 16.08.080)

Exemptions to TMC 16.08 are generally consistent with exemptions found in tree preservation codes reviewed from other jurisdictions as part of this analysis. One provision where variation exists across municipalities is the allowance of a specified number of significant tree removals, without a permit, within a specified timeframe (See Appendix A). TMC 16.08.080 currently allows removal of up to six trees every three consecutive years on developed properties.
Minimum tree removal per parcel

Allowed tree removals within the existing code require revision to address inconsistencies. TMC 16.08.080(G) allows for the removal of not more than six trees from any parcel of land in three consecutive calendar years. This exemption does not apply to heritage or historic trees, or to trees located in a greenbelt or greenbelt zone, critical area and associate buffers, or tree topping.

In addition, TMC 16.08.070(Q) and (R) also reference thresholds. TMC 16.08.070(Q) states "…not more than thirty percent of the trees on a parcel of land shall be removed within a ten-year period, unless the clearing is accomplished as part of an approved development plan…" TMC 16.08.070(R) states, "…when land clearing is performed in conjunction with a specific development proposal not less than twenty percent of the trees, or not less than twelve trees per acre (whichever is greater), shall be retained." These provisions should be revisited and revised to ensure consistency. The City could consider adjusting the number of allowed removals in a given timeframe and/or requiring that tree removals will require a permit and replacement plan if proposed removals result in the parcel having less than a specified number of tree credits or canopy cover.

2.12.1 Minor pruning and thinning standard

Consider adding an exemption for minor pruning and thinning of trees that complies with ANSI A300 (Part 1 – 2017), Tree, Shrub, and Other Woody Plant Management – Standard Practices, to maintain long-term health of existing trees. Example language could include:

> *Minor pruning or thinning of trees; provided, that such activity is consistent with the following requirements:*

1. *The selective removal of branches in the inner crown of the tree provided no more than 25 percent of a tree's leaf-bearing crown is removed. An even distribution of interior small branches and foliage on remaining limbs shall be maintained to avoid over-thinning or "lion-tailing."*
2. *Work involving the removal of more than 25 percent of a tree's crown mass shall demonstrate that the removal is necessary for the clearance of electrical distribution and service lines only.*
3. *The removal of the lower branches of a tree; provided, that the height of the pruned portion shall not exceed one-third of the total tree height and that removal of branches from the lower portion shall not exceed 25 percent of the tree's leaf-bearing crown; and*
4. *Mature and old growth trees are more susceptible to permanent damage or death from pruning. Pruning of mature trees should only be done as a corrective or preventative measure, such as the removal of decayed, rubbing, or crowded branches.*

2.12.2 Endangered Species and Habitat Conservation Plans

The City and the Port of Olympia's Olympia Regional Airport are home to unique flora and fauna of the South Puget Sound Prairie ecosystem. This is critical habitat for three federally listed species protected under the Endangered Species Act including Olympia pocket gopher (*Thomomys mazama pugetensis*), streaked horned lark (*Eremophila alpestris strigata*), and Oregon spotted frog (*Rana pretiosa*). The City plans to incorporate an exemption to TMC 16.08 to allow for planned development, maintenance of City and Port facilities, and maintenance at conservation reserve sites within the City (bushprairiehcp.org). This is supported by Action 4.4.1.A of the UFMP, which states, "Ensure that mitigation and conservation areas created under an approved Habitat Conservation Plan are exempt from tree preservation regulations" (UFMP 2021).

2.12.3 Habitat Corridors

Section under development.

2.13 Alternative plans (TMC 16.08.090)

Consider moving TMC 16.08.090 *Alternative plans* to the section where permitting criteria will be located, as this will apply to alternative reports or plans submitted in place of the required site plans and arborist report for a development project or land clearing permit. Consider naming section 'Modification plans', a modification approval may be tracked administratively within a land use decision or noted in an administrative report by City planning staff. This can be

determined as amendments are developed and any other changes to the structure of the code are established.

2.14 Appeal procedure. (TMC 16.08.100)

No changes proposed, the appeals procedure is cross-referenced to the appropriate development code to avoid redundancy and consistent language during future code updates to the section.

2.15 Violation – Criminal penalties (TMC 16.08.110)

The City may consider adding the Community Development Director as the authority to withhold land use and clearing and grading permits unless prohibited by Tumwater Municipal Code or state law.

2.16 Violation – Civil penalties – Presumption – Other remedies (TMC 16.08.120)

Based on the date of the last code update on this section (2002), it is advisable to review the current minimum costs for tree replacement, materials, and installation in addition to the administration and staff time to process violations to match inflation.

Similar to section 2.15, above, the City may consider adding the Community Development Director as the authority to withhold land use and clearing and grading permits unless prohibited by Tumwater Municipal Code or state law.

3 Additional Recommendations and Considerations

3.1 Early Review

To achieve the best outcomes for protection of large trees and groves during proposed development, urban forestry and tree retention codes should be discussed early and often in the design and development review process. For example, City of Lacey's tree protection and preservation code LMC 14.32.060 Application for permits states:

> *"Prior to application for land use permits and actions such as a land division, commercial site plan review (SPR), or a conditional use permit (CUP), a pre-submission conference shall be required consistent with the requirements of Chapter 1 of the Development Guidelines and Public Works Standards. The pre-submission conference is designed to review the proposed action and identify permit requirements and issues an applicant may incur if the project is implemented. As part of this*

review, it should be made clear that the city of Lacey has an Urban Forest Management Plan and tree protection regulations that require early consideration of tree protection options, and that urban forest concepts and strategies shall be part of the early design considerations for new projects. Location and design of major infrastructure, buildings, and planned uses must consider the tree protection opportunities to further the purposes of the Urban Forest Management Plan."

The City may consider initiating this in its urban forestry (or preliminary application) review process.

3.2 Contractor Requirements

Consider requiring that any arboriculture or forestry professional working within the City be licensed and bonded, obtain a City endorsement to their State Business License, as well as submit a signed statement declaring their understanding of the City's urban forestry regulations. Jurisdictions with similar requirements include the City of Lacey and the City of Mercer Island

3.3 Climate Change Resilience

3.3.1 Thurston Climate Mitigation Plan

Cities and towns in the Puget Sound region are already feeling the impacts of climate change including hotter summers, extended periods of summer drought, an increase in air pollution, extreme flooding, and increased rain events (Climate Impacts Group 2022). A healthy urban tree canopy helps to mitigate some of these impacts through carbon sequestration; the capture, filtration, and slow release of stormwater; and providing shade. The Thurston Regional Planning Council, a partnership between the Cities of Tumwater, Lacey, Olympia, and Thurston County, seeks to reduce climate polluting greenhouse gases and develop a regional framework to address this critical environmental issue. Together they developed the Thurston Climate Mitigation Plan (TCMP 2021) that serves as a regional framework for regional sustainability planning and reducing local contributions to climate change.

According to ongoing research and tracking conducted by the Thurston Regional Planning Council, the greatest sources of greenhouse gas emissions (GHGs) in the region include buildings and energy (54.3% of total emissions) and Transportation and Land Use (35.63% of total emissions). Although deforestation causes the release of stored carbon in trees and prevents further sequestration, silvicultural activities, land conversions, and agricultural practices make up for a much smaller component of the region's GHGs (2.4% of total emissions) (TCMP 2021).

This framework of the TCMP outlines regional sustainability goals, emissions reduction targets, and implementation action items. Implementation strategies are outlined for the following

sectors: (1) buildings and energy use reductions, (2) transportation and land use, (3) water and waste, (4) agriculture, forests, and prairies sector, and (5) "Cross-Cutting" sector which addresses education, outreach, enhanced monitoring, and advocacy.

Specific to this regulation update, the TCMP recognizes the important role that trees, vegetation, and healthy soils play in carbon sequestration as well as erosion reduction, stormwater management, and providing habitat. Strategy A5/A6/A7: *Preserve tree canopy and manage forests and prairies to sequester carbon* includes specific actions consistent with the Urban Forestry Management Plan including:

> *A6.5 Municipal Canopy. Maximize tree canopy on jurisdiction owned or managed land, where appropriate in balance with other jurisdictional goals.*
>
> *A6.9 Tree Canopy Preservation. Develop tree canopy regulations that establishes a baseline for current urban canopy and sets goals for future canopy to increase resilience. Combine direct cooling value (urban heat island mitigation) with carbon sequestration value when evaluating urban tree management.*

3.3.2 Climate Change Impacts: Implications to the Regulations

As much as trees and urban forests help to mitigate the impacts of climate change, they are also greatly affected by the shifts in temperature, precipitation, the growing season, and other factors such as an increase in pest infestations that result from these changes. Heatwaves, drought, and flooding cause decline in tree health and increased mortality in some species. Although many tree species grow in a wide geographic range and may exhibit adaptations and "plasticity" in the face of changing growing conditions, the Puget Sound is starting to see decline of some of our key native species including bigleaf maple (Betzen et al 2021) and western redcedar (Fischer 2019) as well as challenges to tree establishment and vigor in other horticultural varieties.

As noted in the UFMP, the City will need to employ management strategies to ensure the resilience of the City's urban forest. The City tree regulations can serve as a tool in this regard by guiding tree species selection as noted earlier, timing of landscape plant installations, and monitoring protocols to assess tree health and potential pest outbreaks.

3.4 Urban Forestry Permitting Education Materials

The City may consider creating instructional materials for arborists, developers, and homeowners that aid in the interpretation and execution of the City code. This could include a checklist of requirements for permit submittal and examples of what is expected within the arborist report, site plan, tree replacement, and retention plan etc.

The City does not appear to have a Forest Practices form on the 'Permit Applications, Planning Forms and Legal Forms' on their application website page. Although not a common permit, a form or submittal checklist might be useful for applicants and staff to supplement the code and state law.

The City should consider providing an Approved Tree List for developers and homeowners to reference when selecting new or replacement trees to be planted. Providing such a list would educate developers and homeowners so that trees can be an integral part of a development plan and allow for site considerations at an early stage. The list could include species, approximate height and width, preferred soil type, shade and sun tolerance, and minimum required spacing. The list could be all inclusive and include specific species for street trees, or two separate lists could be created.

3.5 Incentives

The City may consider form-based design incentives such as cluster development and flexible setbacks, to encourage infill development and maximize tree retention. For example, the City of Shoreline allows the Director to grant reductions or adjustments to site development standards, including but not limited to variations of the area, width, or composition of required open space or landscaping, variations in parking lot design or access driveway requirements, variations in building setbacks, and variations of grading and stormwater requirements. The City should consider further discussion with stakeholders and City departments to determine which incentives would work best with the jurisdiction's development codes and requirements.

3.6 Monitoring

As outlined in Objective 4.1 Action D of the UFMP (see Section 2.2 of this report), the City will review urban forestry regulations in the municipal code to evaluate their effectiveness in achieving other City strategic priorities, plans, and regulations, responding to changes in climate, and implementing the UFMP. This will begin with this code update anticipated to be completed by summer 2023 and then every four years. The City could consider including the monitoring requirements in the municipal code itself.

3.7 Wildfire Resilience at the Urban-Rural Interface

Washington State experienced record fires during the last decade and these continue to be a threat in our region with increases in the intensity and duration of summer drought. As the regional population is expected to grow and development pressures rise, homeowners are at increased risk to wildfires due to increasing in populations living within proximity to the "wildland urban interface." During the October 2022 work session with the Tree Board and Planning Commission, members raised the topic of wildfire resilience in the context of tree

removal and protection. The City may explore whether the code could include specific provisions for landowners at the urban/rural interface seeking to manage forest stands for wildfire resilience versus for timber management or development. This could address tree removals required by homeowners on properties seeking to initiate wildfire readiness by creating defensible space to protect the perimeter of their property. This issue is also being addressed in the Thurston Hazard Mitigation Plan update that will be completed in 2023.

3.8 Habitat Corridors

Urban development contributes to habitat loss and fragmentation in the landscape. The reduction in total area of continuous habitat segments creates edge and isolation effects that decreases habitat quality and prevents wildlife from moving between habitat patches and features.

A habitat corridor is generally defined as an uninterrupted tract of land characterized by undisturbed forests, wetlands, riparian zones, prairies, and other habitat types. These areas are critical for protecting species richness and biodiversity, providing food and shelter to a variety of amphibians, fish, bird, and animal species. In a rapidly changing landscape with increased urban development, habitat corridors not only provide critical connectivity in the landscape for wildlife, but they also contribute to clean water, reduce wildfire risk, and improve climate resilience.

Urban forest enhancement at a landscape scale and establishing habitat corridors are two strategies for mitigating the negative effects of habitat fragmentation in urbanizing landscapes (Hennings 2010). Adding wildlife and habitat conservation considerations into local zoning codes and regulations, as well as development plans, is one tool that local governments can utilize to address these issues.

Currently, TMC 18.30 establishes a Greenbelt Zone District intended to provide protected open space and other natural assets that provide habitat for wildlife, preserve natural areas for passive recreational use, and protect the aesthetic quality of the Tumwater community. The updates to the City's urban forestry codes also serves an important function in addressing protections for large trees and groves in development scenarios. TMC 18.42.130 *Park and open space area standards for development without divisions of land* and 17.12.210 *Park and open space area standards for divisions of land* also provide for protection of natural areas in the context of the urban environment. To build upon these policy efforts, the city could consider exploring additional strategies to enhance open space and habitat connectivity at a landscape scale by establishing additional habitat corridors or pathways throughout other land use zones and neighborhoods outside of this regulatory update process. This could include a matrix of urban

land-uses that includes public land while also engaging private landowners and developers in the overall goal of urban ecosystem health and sustainability.

3.9 Regulatory Linkages – Coordination with other City Plans and Guidelines

Several City policy and code documents were reviewed for language and content related to TMC 16.08, including TMC 12.24 *Street trees*, the Tumwater 2002 Street Tree Plan, Tumwater Comprehensive Plan Land Use Element, Tumwater Town Center Street Design, Design Guidelines for Capitol Boulevard Community Zone, Capitol Boulevard Corridor Plan, Tumwater Development Guide, and the Tumwater Brewery District Plan. While these documents primarily contain references applicable to TMC 12.24 *Street trees*, there are some sections in each that would benefit from TMC 16.08 code updates and updates to the plans themselves, as outlined below. The Gap Analysis for TMC 12.24 *Street trees* will be completed in the future and it will address street tree code updates at that time.

3.9.1 TMC 12.24 Street Trees

A separate Gap Analysis will be completed for TMC 12.24 *Street trees* and the Tumwater Street Tree Plan as part of this larger municipal code and plan update. As the project team considers amendments - implications for TMC 16.08, TMC 12.24, and the Street Tree Plan will be evaluated. A couple of items to be considered include:

- TMC 12.24.010 and TMC 12.24.020 could include reference to the new Approved Tree List, as both sections include certain species that are prohibited from being planted.
- TMC 12.24.050 *Fire hazards- abatement* should be updated for consistency with the above proposed Wildfire Resilience (Section 3.7), if included in the update of TMC 16.08.
- Contractor licensing requirements for tree removal contractors.
- Climate change resilience and best management practices identified for planting and maintenance in a changing environment.
- Updates to definitions and use of terms to ensure consistency across TMC 18.47, TMC 16.08, and TMC 12.24.

3.9.2 TMC 16.20-16.32 Critical Areas Regulations

Although updated recently, future updates to the Critical Areas Regulations may consider future mandatory state updates, improving cross-references to TMC 16.08 for any added provisions addressing tree protection area standards, critical root zones, and permanent critical

area fencing proposed. This will enable consistent tree protection during construction across non-critical areas and critical area parcels in the City.

3.9.3 TMC 18.47 Landscaping

A separate gap analysis will be developed for TMC 18.47 *Landscaping* in 2023 as part of the City's urban forestry municipal code updates. As the City considers amendments and updates for TMC 18.47, implications for TMC 12.24 will be evaluated. The following outlines a preliminary list of revisions or updates that may be needed for consistency with TMC 12.24:

- Review landscaping plan requirements in TMC 18.47.020 to ensure consistency with updated tree retention plan requirements in TMC 16.08 *Protection of trees and vegetation* for depicting significant trees, critical root zones, tree protection fencing requirements, and appropriate species and spacing.
- Reference updated permitting requirements outlined in TMC 16.08 *Protection of trees and vegetation* and TMC 12.24 *Street Trees.*
- Section 18.47.020(L) could include a reference to the revised Approved Street Tree Species List.
- Review species choice in Section 18.47.020(N) to ensure consistency definition of invasive plant species and noxious weeds that are prohibited.
- Update maintenance recommendations in TMC 18.47.040 for consistency with those outlined in the updated Street Tree Plan and TMC 12.24, as it pertains to maintenance of street trees.
- Section 18.47.050(A)(2)(b) could include a reference to the Approved Street Tree list and/or expand on how street trees would be best to accomplish 75 percent coverage in four years and perform well in urban landscape conditions. Additionally, include reference to the Approved Street Tree List throughout TMC 18.47.050(B), (D), and (E).
- Updates to definitions and use of terms to ensure consistency across TMC 18.47, TMC 16.08, and TMC 12.24.

3.9.4 Tumwater Littlerock Road Subarea Plan

This document serves to create an understanding of the existing conditions and desired design of the Littlerock Road Subarea. The overall vision for the development of this area was informed by public input. The area is 410 acres within city boundaries composed of commercial and multi-residential mixed uses. The goal of future development is to create a "village" that is "transit oriented and pedestrian friendly." The build-out of the area brings

forward two major concerns "provisions of adequate infrastructure to serve new development…and stormwater [management]." Significant development would impact existing trees as well as provide opportunities for new plantings. Most of the document describes the opportunities available in this subarea for growth and change as well as the overall vision for the area. Suggested road sections, detailing street trees and trees planted in the median, include six-foot-wide planter strips and 12-foot-wide median planter strips. Trees are a noted part of the existing infrastructure. The importance of preserving the existing urban forest to offset significant development is emphasized. Consider the following updates:

- Section 2.1 Community Involvement could benefit from including updates pertaining to tree retention and tree protection standards. Additionally, include a reference to the new Approved Tree List.
- Section 3.2 Vision for the Subarea could include a reference to the new Approved Tree List.
- Section 5.1 Necessary Implementation Actions could include updated tree protection measures for existing trees to be retained, as well as requiring replacement trees or street trees to be selected from the new Approved Tree List.

3.9.5 Tumwater Town Center Street Design Plan

This document provides recommendations for types of landscaping along specific streets and includes recommended tree species to be planted. This document could benefit from an in-depth look at the types of landscaping and species recommended to be planted, to ensure the species and landscaping types are consistent with the overall canopy and vegetation goals identified in TMC 16.08. A table of the Approved Trees List, or reference to the list, would also be beneficial.

3.9.6 Design Guidelines for Capitol Boulevard Community Zone

This document complements TMC 18.21 *CBC Capitol Blvd Community Zone District*. There are specific requirements listed for development regarding frontage improvements. According to this document, tree replacement is considered a major change and needs to follow the guidelines outlined within. Details include appropriate tree spacing, planting strip width, and sidewalk specifications for various types of projects. There are additional sections that discuss landscaping installation specifically as well as expected maintenance. These sections contain broad best management practices but do contain information that should be reviewed and referenced as the Street Tree Plan is updated in 2023.

Although this document primarily contains standards specific to street trees, the Applicability section includes reference to tree replacement standards that should be updated. Section C.3.4 Maintenance should be updated to reflect the maintenance standards contained in TMC 16.08 for consistency.

3.9.7 Tumwater Capitol Boulevard Corridor Plan

This document focuses on economic conditions, transportation options and safety, and aesthetics of the Capitol Boulevard (Blvd). Street trees are addressed peripherally in the context of preservation in specific sections of the thoroughfare as well as identifying areas that would benefit from new street tree plantings as new development happens. Most of the document is dedicated to overarching goals and objectives for different segments of the Blvd, such as the addition of bus stops or the installation of new bike lanes. These objectives parallel the goals outlined in the UFMP. Listed goals include "choose appropriate species and locations for tree planting and attend to maintenance issues" (Goals and Objectives: Respect the environment). The document also notes the importance of parks and green spaces within the city scape.

Although this document primarily contains standards specific to street trees, the Goals and Objectives section could be updated with maintenance standards from TMC 16.08, rather than just stating, "…be aware of maintenance that comes with trees." This section could also reference the new Approved Trees List where it states, "…choose appropriate species and locations for trees."

3.9.8 Tumwater Development Guide

This document, adopted in 1995 with subsequent amendments, contains standards related to development activities. General engineering considerations, street, sidewalk, right of way sections, land division improvements and public utility standards for public and private developments are included.

Chapter 1- Zoning & Related Issues

Section 1.11 includes a reference existing tree retention during design review. Referencing the Urban Forestry Management Plan may provide a useful cross reference to supporting plans and policies relating to trees and vegetation retention.

Section 1.14 includes a summary of the permit requirements for tree removal, exempt activities and Forest Practices. On City Council adoption of tree and vegetation preservation regulation updates, the City should review Development Guide pages 1-8 and 1-9 for consistency with regulations, state law, and TMC cross-references.

Chapter 2- Land Divisions

TMC Chapter 17 *Land Division* is adopted by reference in the City's Development Guide, Chapter 2. TMC Section 17.12 *General Design Standards* specifically relates to tree and vegetation preservation and retention goals in TMC 16.08. Specifically, trees are mentioned in the following sections:

- TMC 17.04 *Definitions*
  - .205 *Forest land*
  - .450 *Street tree*
- TMC 17.12.070 *Natural vegetation and features*
- TMC 17.12.210 *Park and open space area standards for divisions of land.*

The City may consider streamlining definitions for similar terms in TMC 17.12 and TMC 16.08 ('tree protection areas' and 'tree protection open space'). TMC 17.12 does not appear to define 'tree protection areas', although they appear to be synonymous terms. TMC 17.12.210 should directly reference the sub-section TMC 16.08.070 and TMC 17.24.030, to clarify how and when tree protection areas are established or set-aside mechanism used by the Department in practice (i.e., a dedicated tract, easement, or covenant/notice on title).

Chapter 3- General Engineering Considerations

Street trees are discussed in Chapter 3. It states that all arterial and collector streets be planted with street trees. Specific tree species are listed as are planting size requirements, tree spacing within a planting strip, and expected width of planting strips. A brief overview of maintenance expectations is also outlined. The maintenance responsibility regarding development and the planting of street trees is noted as well.

Chapter 4 and Addendum – Transportation

Transportation infrastructure is discussed in Chapter 4 and 2020 Addendum. The chapter contains specific design considerations for street sections. Within the addendum planter strip, widths along arterials and collectors were increased from a maximum of 6 feet to a range of between 6-10 feet at the discretion of staff.

The Street Section Design table (Chapter 4 Addendum, page 3) may include a footnote update, to cross reference an Approved Trees List, with commentary on appropriate tree species when abutting proposed bike lanes for Public Works and Facilities maintenance and root impacts to infrastructure.

Section 4.49 Street Trees (pages 4-40, 4-41, and 4-42) could be updated with the new Approved Trees List, in addition to updating the maintenance standards for residential and commercial projects for consistency.

Chapter 5- Stormwater Management

Development Guide, Chapter 5 adopts the City of Tumwater Drainage Design and Erosion Control Manual (DDECM) by reference (effective July 1, 2022) to meet Washington State Department of Ecology requirements. As it relates to trees and vegetation, the City's DDECM includes standards for stormwater facility vegetation and tree maintenance detention ponds and drainage systems for new development and redevelopment projects. This includes removal and pruning of trees in these facilities.

Volume V-Stormwater BMPs of the DDECM, includes best management for stormwater management according to Ecology BMPs. Chapter 3 – LID Site Design BMPs includes Ecology BMP T5.40 for preserving and restoring native vegetation on a site – with the goal of protecting large, connected tracts of native forests and soils.

Volume V, Chapter 8, includes Ecology BMP T5.16 for tree planting and tree retention. This outlines standards for newly planted or retained trees to receive flow control credits including design criteria, best management practices for tree protection during construction, and operations and maintenance criteria. Section 18.16 Landscaping of Chapter 18 Detention Ponds outlines the methods and criteria for the design and analysis of detention ponds. This includes site and planting specifications for landscaping and tree installation within stormwater tracts, as well as guidelines for naturalist planting. Guidelines for tree species selection are included for an open woodland planting scheme. Any amendments to TMC 16.08 as well as TMC 18.47 *Landscaping*, should consider the tree specifications and maintenance requirements. For example, trees cannot be planted on berms that meet the criteria of dams or within 10 feet of inlet or outlet pipes of detention ponds.

Additionally, Chapter 26 Wet Pool Facilities outlines similar criteria for preserving the functions of this stormwater facility. This may require pruning or tree removal to manage unwanted vegetation. This chapter also encourages the planting of clusters of trees and shrubs as part of the design scheme when feasible.

Appendix V-F – Planting and Landscaping Requirements and states that whenever possible, "existing trees and other native vegetation around the facility should be saved."

The City's DDECM was adopted in summer 2022. Therefore, changes or improvements related to tree and vegetation preservation should be considered during the next state mandated stormwater/drainage regional manual update. To ensure consistency between Volume V and TMC 16.08, the following updates are recommended:

1. Section 3.2.2 *Design Criteria* specifically references TMC 16.08.050 for compliance with tree protection and replacement requirements. This should be updated for consistency with the revised tree preservation code.
2. Section 7.2 Full Dispersion (Ecology BMP T5.30) references removal of dangerous or diseased trees that may require approval by the city. Consider adding specific reference to TMC 16.08 related to hazard tree requirements.
3. Section 8.4.2 Newly Planted Trees includes a reference to (1) an approved list of tree species on the city website and (2) standard practices for planting materials and methods. The city should ensure these educational materials are up to date and meet the standards set forth in any future updates to TMC 16.08.
4. Ensure consistency with Appendix V-F – *Planting and Landscaping Requirements* and any future updates to TMC 18.47 *Landscaping*. Add references to the city's approved and prohibited tree lists developed in tandem with updates to TMC 16.08 and TMC 12.24 *Street Trees*.

Chapters 6 & 7- Public Utilities

Development Guide, Chapter 6 and 7 discuss the Tumwater Water and Sanitary System, managed by the City of Tumwater Water Resources & Sustainability Department and the LOTT Clean Water Alliance. These chapters include requirements for domestic water connections/extensions and fire flow. These chapters may benefit from ensuring trees and vegetation cover types installed do not conflict with underground utility connections and easements. A cross-reference to any internal utility policy documents or tree and vegetation cover species list from an abutting Water District may be beneficial to guide homeowners and developers. Particularly, during a formal development application process to implement UFMP goal: 'The Right Tree Right Place'. Tumwater Citywide Design Guidelines

This document contains design guidelines for projects that are not addressed by other City planning and design guidelines, with the intent of implementing the City's Comprehensive Plan vision. The guidelines apply to all new commercial, mixed use, residential, industrial, and institutional development projects that are not already addressed by specific district or corridor design guidelines, additions to existing buildings that increase gross floor area by 1,000 square feet or more or increase gross floor area by 50 percent or more, and exterior modifications of existing structures. Design guidelines are organized by land use type and they include guidelines for site planning, pedestrian access, amenities, and open space, parking areas, building, and lighting. The City may consider the following updates to the Design Guidelines based on updated best practices outlined in the revised Street Tree Plan or include by reference:

1. Update Section 1.A.1 Purpose to include purposes identified in Gap Analysis Section 2.2.
2. Section 1.A.2 Administrative Procedures is an opportunity to include a statement about incentives/variation allowances in development standards to encourage tree retention.
3. Consider adding a statement about trees and the aesthetics and functional benefits that selecting the appropriate street tree species can provide to the Intent bullet list in Section 2.B.2 Relationship to Street Front.
4. Opportunity to add a reference to the Approved Street Tree List in Figures 2.B.2-1 and 2.B.2-2.
5. Opportunity to add a reference to the Approved Street Tree List in Section 2.B.2.6 Streetscape.
6. There is an exception on page 2-8 regarding requirements for residential buildings on signature roads (Section 2.B.2.5.b(3)) that states that departures from maximum setbacks may be allowed to preserve existing large trees. "Existing large tree" could be defined with a specific DBH, or DBH based on species; allowed setback departures could be elaborated upon by clarifying within the document itself or adding a reference to the new section in TMC 16.08 that discusses development incentives, including allowed setback reductions.
7. Section 2.B.4.2 Internal Roadways and Vehicular Circulation contains street tree requirements.
8. Section 2.B.5.1 Unified Site Plans (for lots with multiple buildings or a total area greater than 2 acres) criteria could include the preservation of large trees (to be defined) and groves.
9. Section 2.B.7.2(g) Integration of Stormwater Facilities into Site Design provides an opportunity to suggest the use of specific tree species best suited for biofiltration, LID, and stormwater management needs.
10. Section 2.B.2.8.1(a) discusses requirements for common open space in multifamily developments. In addition to the requirements outlined, the City could consider requiring the common open space area be located to preserve and retain landmark trees and/or groves, when possible.
11. Section 2.B.2.9.1 discusses requirements for non-residential open space. The City could consider requiring the open space to include landmark trees and/or groves when possible.

12. Section 2.B.11.1.b(2) could include a reference to the Approved Street Tree List.
13. Section 2.C.1.2(a) could reference the Approved Street Tree List.
14. Section 2.C.3.2(f) could include a direct reference to the Approved Street Tree List, and (m) could include a reference to the Approved Tree List.
15. Section 2.C.3.5(a) states that maintaining existing mature evergreen trees and including existing and new evergreens in site development is an important objective. When appropriate, the Director may also relax other standards, such as setbacks and geometric requirements, to promote the retention of mature trees. This section could be elaborated upon by clarifying within the document itself or adding a reference to the new section in TMC 16.08 that discusses development incentives, including allowed setback reductions. Further, this section includes the protection of roots and setbacks to maintain the tree's health and should be reviewed to include potentially any updates to tree protection measures.
16. Section 2.D.2 Parking Area Landscaping could include a list of trees best suited for improving water quality and stormwater management. Section 2.D.2.1(b) states that mature conifer trees over 24 inches in caliper may count as two trees (with regard to tree retention standards). The City should consider updating this sentence to use DBH rather than caliper.
17. Section 2.E.1.1.a(1) includes the retention of a substantial number of large trees, especially native trees such as conifers, to accomplish the objective that the architectural design of new development must reflect and add to Tumwater's design character by incorporating distinctive and substantial landscaping to enhance the building's setting. The City should consider making the retention of large trees a requirement in this section rather than calling out the retention of large trees as an option to accomplish an objective. The goal would be to require new development to prioritize the preservation of high-retention value trees when possible.

3.9.9 Tumwater Brewery District Plan

This document describes the redevelopment vision for the Brewery District. It encompasses a "*series of recommended transportation enhancements, public realm improvements, a vision for building character and development intensity, and a set of implementation and phasing strategies*." As road improvements happen, street tree planting opportunities occur. The addition of trees helps to calm the overall atmosphere and creates a more welcoming environment. The document includes design recommendations and broad street tree placement recommendations (i.e., "*trees should be interspersed with on-street parking*") and notes the importance of using trees and the

landscape to help link together different areas. Trees are mentioned peripherally when building frontages are being improved. Consider the following updates:

- TMC 18.27.050 *Table of development standards* references "preservation of mature tree stands" in note (2). A definition of what constitutes a mature tree stand or alternate language could be included here for clarity.
- Goals/Objectives Section 1.3 could benefit from updating vegetation and tree replacement standards. This section could also include a reference to the new Approved Tree List.

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Appendix A

JURISDICTIONAL COMPARISON SUMMARY

Topic	**Tumwater** *TMC 16.08*	**Lacey** *LMC 14.32*	**Edmonds** *EMC 23.10*	**Lake Forest Park** *LFPMC 16.14*	**Burien** *BMC 19.26*	**Olympia** *OMC 16.56, 16.58, 16.60*	**Shoreline** *SDC 20.50.350 and .360*
	(Current, last amended 2017, last substantial amendment 2006)	*(UFMP updated 2021)*	*(Updated 2021)*	*(Updated 2017)*	*(Updated 2022)*	*(Updated 2021)*	*(Updated 2022)*
Tree Retention Standards	**Tree retention standards required by percent of trees on parcel or number of trees per acre.** • Maximum 30% of trees on any parcel allowed to be removed within any 10-year period unless part of an approved development plan. • When land clearing is performed in conjunction with a specific development proposal, minimum retention of 20% of the trees or 12 trees per acre (whichever is greater). • Separate retention standard for sites that were formerly Christmas tree farms.	**Tree standards applied are specific to the type of development and lot size. Requirements are based on either the number of saved or new trees.** • Developing Single & Multi-family: 2-5 new or retained trees. Developed Single & Multi-family: Four new or retained trees per 5,000 ft. • Developing Commercial or Industrial: Two new or retained trees per 10,000 ft. • Developed Commercial, Industrial, Multi-family proposing addition, tree removal, or site disturbance: Two new or retained trees per 10,000 ft. • Class IV Forest Practice Activity: replanting required when average stocking* falls below 80 ft squared per acre. **Stocking is a quantitative measure of the area occupied by trees relative to a desired or targeted tree density.*	**Tree retention standards required by percent of significant trees on parcel, specific to type of development.** • New Single Family, short subdivision, or subdivision: 30% of all significant trees in the developable site. • Multi-family development, unit lot short subdivision, or unit lot subdivision: 25% of all significant trees in the developable site. • For developing properties with fewer than three significant trees, trees shall be retained and/or planted that will result in the site having at least three trees per 8,000 SF of lot area.	**Minimum Tree Canopy Requirement. Tree canopy cover goals are based on lot size and land use types.** Tree canopy coverage is measured by the percentage of canopy provided by existing trees or projected canopy coverage of new trees and is calculated by the City's arborist. • Single family > 15,000 sf: 58% • Single family 10,000-15,000 sf: 39% • Single family less than 10,000 sf: 28% • Multifamily lots: 15% • Commercial lots: 15% • Southern Gateway neighborhood: 5-15%	**Minimum tree credit requirement.** • The required minimum tree credits for single-family and multi-family developments are one tree credit per 1,000 SF of developable area. For commercial, industrial, or non-residential lots, the minimum tree credit is 0.15 per 1,000 SF. • Tree credits are derived from the size of a tree. See Table 19.26.050-2 Tree Credits for more information. • Tree credits are assessed by existing healthy trees, replacement trees, and fee-in-lieu.	**Minimum tree density requirement.** • A minimum tree density of 30 tree units per acre is required on the buildable area of each site, except within the Green Cove Basin and in critical areas. • Tree units are based on the trunk size of the tree and vary by size. See the Olympia Urban Forestry Manual Table 4-A. • Developing properties are required to meet a minimum tree density of 30 tree units/acre. • Commercial/Industrial/Multifamily (5 units or more) properties, proposing an addition or other site disturbance are required to replace a minimum tree density of one tree unit for every 500 sq. ft. of site area to be disturbed and three tree units for every one tree unit proposed for removal, up to the minimum tree density of 30 tree units per acre for the entire site.	**Tree retention standards required by % of significant trees on parcel.** • At least 25 percent of significant trees on a given site shall be retained, excluding critical areas and critical area buffers, or • At least 30 percent of the significant trees on a given site (including critical areas and critical area buffers) shall be retained.

Topic	**Tumwater** *TMC 16.08*	**Lacey** *LMC 14.32*	**Edmonds** *EMC 23.10*	**Lake Forest Park** *LFPMC 16.14*	**Burien** *BMC 19.26*	**Olympia** *OMC 16.56, 16.58, 16.60*	**Shoreline** *SDC 20.50.350 and .360*
Tree Replacement Standards	**1:1 replacement ratio.** • Replacement trees shall consist of seedlings of the same or similar species to those trees removed, which shall be at least two years old. • Where the standard is waived or modified, the applicant shall plant a minimum of three trees for each tree cleared in excess of the standard.	**Replacement standards based on lot size.** • Developing Single & Multi-family: # of new trees based on lot size- anywhere from 2-5 trees • Developed Single & Multi-family: four trees per 5,000 ft • Developing Commercial or Industrial: Two trees per 10,000 ft • Developed Commercial, Industrial, Multi-family proposing addition, tree removal, or site disturbance: Two trees per 10,000 ft • Class IV Forest Practice Activity: replanting required when average stocking falls below 80 ft squared per acre • Every commercial project over one-acre in size and every land division over two acres in size shall be required to designate a tree tract(s). • Tree tract shall cover 5% or more of the site. • Minimum replacement sizes are 2" caliper for deciduous and 7' tall for conifers.	**Replacement standards based on size of tree removed.** • One replacement tree for each significant tree between 6 and 10" DBH removed. • Two trees for each significant tree between 10.1 and 14" DBH removed. • Three replacement trees for each significant tree greater than 14" but less than 24" DBH removed. • Minimum size for replacement trees is 1.5" caliper for deciduous and 6' in height for evergreen trees. • Replacement trees shall be primarily native species.	**Replacement standards are based on canopy coverage calculated by City Arborist.** • Replacement species shall be selected from the approved general tree list maintained by the City. • When removing native trees, native trees selected as replacements. • All replacement trees shall meet the minimum standards for size and quality according to the current edition of the ANSI Z60.1 for nursery stock.	**Replacement standards based on required tree credits.** • Any exceptional healthy tree required to be removed as part of a development permit requires replacement at a ratio of three trees for each tree removed and shall follow size and planting standards. • This replacement is in addition to the minimum required tree credits in BMC 19.26.050-1. • Two-inch caliper at the time of planting for deciduous or broadleaf trees and 6' in height for evergreen conifers.	**Replacement standards based on required tree density.** • Replacement trees shall meet the quality and size and be planted pursuant to standards delineated in the Urban Forestry Manual. • Replacement trees shall be native species or well-adapted drought-tolerant vegetation, and at least 60% conifer trees, unless determined by the Urban Forester as not appropriate for site conditions.	**1:1 replacement ratio or greater depending on replacement size, with 3 trees maximum.** • One existing significant tree of 8" in diameter for conifers or 12" diameter for all others equals 1 new tree. • Each additional 3" in DBH equals 1 additional new tree, up to 3 trees per significant tree removed. • Minimum size requirements for replacement trees: deciduous trees shall be at least 1.5" in caliper and evergreens 6' in height.
Significant Tree Threshold	6" DBH or greater (Though not labeled “significant” in code)	Not defined.	6" DBH or greater	6" DBH or greater	6" DBH or greater	6" DBH or greater	8" DBH or greater

Topic	**Tumwater** *TMC 16.08*	**Lacey** *LMC 14.32*	**Edmonds** *EMC 23.10*	**Lake Forest Park** *LFPMC 16.14*	**Burien** *BMC 19.26*	**Olympia** *OMC 16.56, 16.58, 16.60*	**Shoreline** *SDC 20.50.350 and .360*
Protection of Large Trees or Groves	Heritage trees defined are unusual, rare, and high quality. • Groves mentioned but not clearly defined.	Historic trees, Groves of trees, and Specimen trees defined. Defined as unusual, rare, or high-quality trees.	• Landmark trees - 24" DBH or greater. • Grove - Three or more significant trees with overlapping or touching crowns	• Exceptional trees - defined based on species and DBH. • Landmark trees- 24" DBH or greater. • Groves of trees- contiguous grouping of trees with overlapping canopies that are 12" DBH or greater and occupy a minimum of 7,000 SF in size	• Exceptional trees - trees greater than 30" DBH or based on diameter by species. • See Table 19.26.040-1 Exceptional Tree Table with Threshold Diameters at Standard Height. • Heritage trees - Any tree identified by size and species specific.	• Landmark trees - 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 association with historic figures, events, or properties, rare or unusual species, or exceptional aesthetic quality. • Note entire chapter on Landmark tree protection (OMC 16.56). Includes provisions for groves.	Landmark trees - greater than 30" DBH
Tree Protection Requirements	Requires temporary fencing around CRZ and field verification of retained trees by the city tree protection professional.	All requirements for protection of trees and vegetation detailed in plans prepared by the city's tree protection professional or in land clearing conditions required by staff such as fencing and other protection measures shall be satisfied.	Requires minimum 3-foot-tall fencing and signage along LOD spaced no further than 15' apart stating: "Tree and Soil Protection Area, Entrance Prohibited." Orange polyethylene laminar fencing is acceptable.	Conditions necessary to safeguard trees identified for protection.	Requires 6-foot-tall chain link fencing and sign stating, "Tree Protection Zone – Keep Out." Signage every twenty (20) feet around TPZ, fencing inspection.	Prior to initiating tree removal on the site, soils, vegetated areas, and individual trees to be preserved shall be protected from potentially damaging activities pursuant to standards in the Urban Forestry Manual.	Requires 6-foot-tall chain link fencing and "Tree Protection Area" signage around tree protection zone.
Incentives for Higher Level of Tree Protection	None specified.	None specified.	None specified.	None specified.	None specified.	None specified.	Reductions or adjustments to other site development standards, including but not limited to variations of the area, width, or composition of required open space or landscaping, variations in parking lot design or access driveway requirements, building setbacks, grading and stormwater requirements.

Topic	**Tumwater** *TMC 16.08*	**Lacey** *LMC 14.32*	**Edmonds** *EMC 23.10*	**Lake Forest Park** *LFPMC 16.14*	**Burien** *BMC 19.26*	**Olympia** *OMC 16.56, 16.58, 16.60*	**Shoreline** *SDC 20.50.350 and .360*
Protection and Management of Public Trees	Restrictions on planting willow, cottonwood, poplar, and any other trees the roots of which are likely to obstruct or injure sanitary sewers or other underground utilities, except as approved by the director of public works in accordance with a city-approved plan or project. See also TMC 12.24 Street trees.	• It is unlawful for any person or city department to top any street tree, park tree or other tree on public property. • Street trees can be counted towards tree replacement requirements for individual lots. • See Chapter 12.20 for planting location, species, and size requirements.	Pertains to Street Trees Chapter 18.85: • When it is necessary to remove a street tree in connection with paving of a sidewalk, or the paving or widening of the portion of a street or highway used for vehicular traffic, the city shall replant the tree(s) or replace them. If conditions prevent replanting, this requirement may be satisfied if any equivalent number of trees are planted nearby in accordance with the street tree plan. • Replacements shall meet the standards specified in the street tree plan for size, species, and placement. • The permittee shall bear the costs of removal and replacement. Removal, planting and replacement of all street trees shall conform to the standards in the material labeled "Standards for Planting Street Trees Within the City of Edmonds."		• The city shall maintain all trees and other vegetation on the city maintenance responsibility list established pursuant to this chapter. • No person shall prune or remove trees or other vegetation on the city property identified on the city maintenance responsibility list. • The owner of property adjacent to an improved or unimproved right-of-way not listed on the city maintenance list shall maintain street trees and other vegetation located within the maintenance area. • New trees planted in the right-of-way shall be selected from a list of recommended species approved by the city.	• No City trees shall be cut down, killed, or removed for any reason without filing an application with the Urban Forester; procuring a permit for removal from the Urban Forester; and mitigating the loss of the removed tree(s) pursuant to the mitigation section of this ordinance. • The mitigation value shall be calculated by the Urban Forester using the formula outlined the "Guide for Establishing Values of Trees and Other Plants," published by the International Society of Arboriculture and shall be paid into the City Tree Account. • All or a portion of this mitigation may be met by planting replacement trees on the site. • 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.	• Planting of Public Trees: A right-of-way use permit shall be required and issued by the director of public works (hereafter "director") for planting public trees in rights-of-way adjacent to an applicant's property according to the variety and spacing approved in the Engineering Development Manual. • Nonexempt Pruning and Removal of Public Trees: A right-of-way use permit shall be required and issued by the director for the nonexempt pruning or removal of public trees in rights-of-way adjacent to an applicant's property. • Maintenance of Public Trees: All planted trees and replacement trees shall be maintained in good health and condition by an applicant, or their successor in interest, in accordance with the issued right-of-way use permit or other authorizing permit.

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Code Enforcement/ Mitigation for Violations	Corrective actions may include: • Restoration and replanting of surface vegetation with plant material similar in character and extent as existed prior to the unauthorized clearing;- Implementation of drainage and erosion control measures; • Replanting of trees equal in value to those lost through unauthorized clearing. • The value of the trees removed shall be determined by the city's tree protection professional using landscape tree appraisal methodology published in the current edition of the International Society of Arboriculture's Guide for Plant Appraisal. • Civil penalties such as withholding of permit issuance and corrective actions. • Criminal penalties including fines and misdemeanor charges.	Corrective actions may include: • Mitigation • Potential Environmental Damage Review • Comprehensive plan for revegetation • Fee to City Tree Account	• Penalty for illegal removal of trees shall be $1,500 per tree less than 12 inches in diameter and the appraised value of trees twelve inches or more in diameter. • Removal of existing 12-inch diameter or larger trees in violation of this chapter will require an appraisal of the tree value by the city tree protection professional using trunk formula method in the current edition of the Guide for Plant Appraisal. • The cost of the appraisal shall be paid by the person(s) who removed existing trees in violation of this chapter. • Penalties shall be paid into the city tree fund. If diameter of removed tree is unknown, determination of the diameter size shall be made by the city arborist by comparing size of stump and species to similar trees in similar growing conditions.	• Removal of existing trees in violation of Chapter 16.14 will require an appraisal of the tree value by the qualified arborist using the trunk formula method. • Payment goes into the city tree account. Tree replacement required.	• Table 19.26.100-1 is a table containing number of required replacement trees for illegal removal of trees, based on DBH. • Requires fines for illegal tree removal that range from $700 to $15,000. • This allows for an education period prior to penalizing people who violate the code.	• Any person who violates the 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.	• Where development activity has occurred that does not comply with the requirements of this subchapter, the requirements of any other section of the Shoreline Development Code, or approved permit conditions, the Director may require the site to be restored to as near pre-project original condition as possible. • Removal of significant trees without a permit can result in a penalty of $9,000 per tree. • Removal of landmark trees without a permit can result in a penalty of $15,000 per tree.

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Tree Protection Plan (Permit) Requirements	**Report required for Land clearing permit.** Application must include the following: • Tree inventory • Tree protection plan • Site plan • Tree replacement plan • Timeline for implementation • Monitoring of the tree protection/replacement plan.	**Tree Protection Professional Report** required on forested property greater in size than one acre or commercial property with one or more trees, or other sites deemed necessary.	• **Tree retention and protection plan required** for short subdivision, subdivision, new multi-family, and new single-family development applications, as well as tree removal on developed sites not exempted by EDC 23.10.040. • Tree removal associated with building permit, subdivision, or other land use approval will be reviewed with the associated project and will not require a separate tree removal permit. • Tree Retention Plan components include tree inventory (containing numbering system, size, proposed tree status, brief health rating, and tree species), site plan, and an Arborist Report.	**Permit categories include** **Minor tree permit** **Major tree permit** **Utility permits** **Forest management** • Minor permits may be issued without review by the City arborist, whereas tree removal under major tree permits must be reviewed by the City's arborist. • Minor tree permits are required for removal of two or less significant trees within a 3-year period (unless trees are protected or located in a critical areas or buffers), invasive tree removal, and removal of trees covered by an approved forest management permit. • Major tree permits are required for landmark tree removal, removal of three or more significant trees in three-year period, minor development activity within the CRZ of significant trees, major development activity, and trees located in critical areas or buffers.	**Permit categories include:** • Minor tree permit (tree removal not associated with development) • Major tree permit (tree removal associated with development) • For Major Tree Removal permits, applicants shall submit a tree retention plan prepared by a qualified tree professional and development plan concurrent with a land use review application, grading permit, building permit, subdivision, or short subdivision application. • The retention plan shall consist of a tree survey that identifies the location, size, and species of all significant trees on-site, labels any tree 18" or greater for the purpose of establishing wildlife habitat, and any tree designated as a Heritage tree.	• Soil and Vegetation Plan required for Tree removal permits and land development on property having a tree density below the minimum required. • The scale of the project and the size and quantity of trees proposed for removal, preservation, and planting will determine which level of Soil and Vegetation Plan is required, as delineated in the Urban Forestry Manual. Permits are reviewed by Urban Forester.	• Pre-construction meeting required prior to the commencement of clearing and grading activities. • Requires an Arborist or Qualified Professional to prepare a report documenting baseline conditions. • Requires applicant to prepare a tree plan that highlight retained trees, tree protection measures, calls out landmark trees, and replacement trees specifications. • If any construction work needs to be performed inside the dripline, critical root zone, or inner critical root zone, project arborist will be on-site to supervise work.

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Recommended City Trees List	Approved Street Tree List and Prohibited Trees provided on City website. Approved Street Tree Species | City of Tumwater, WA	Street tree and general tree list in Lacey Urban Forest Management Plan: https://cityoflacey.org/wp-content/uploads/sites/3/2022/03/UFMP-Document-092621-FINAL.pdf	Tree List for homeowners provided on City website: Trees - City of Edmonds, WA (edmondswa.gov)	City approved tree list: https://www.cityoflfp.gov/239/Tree-List	• BMC 19.65.340 contains an Invasive Plant List • BMC 19.65.350 contains a Nuisance tree species list	None provided in code, but Street Tree List on city website: Allowed Street Tree List.xlsx (revize.com)	Street tree list: http://www.shorelinewa.gov/home/showdocument?id=2454
City Tree Account, Fee in lieu, and Mitigation	City Tree Account • In lieu of planting of replacement trees, the applicant may contribute a cash payment to the city's tree account in an amount equal to 125 percent of the retail value replacement cost.	City Tree Account • If the cost of restoration of the site is less than the true value of environmental damage at the site, the balance shall be paid to the city tree account. The city shall then utilize those funds for planting trees in other areas of the city. • Value of damage assessed using the current edition of the ISA "Guide for Plant Appraisal" as determined by the City Tree Protection Professional.	City Tree Fund • The developer may pay a fee-in-lieu for each replacement tree required but not replaced, with documentation. • The amount of the fee shall be $1,000 multiplied by the number of trees necessary to satisfy the tree replacement requirements of this section and shall be deposited into the city's tree fund. • The fee shall be paid to the city prior to the issuance of a tree removal permit or associated development permit. • For each significant tree greater than 24 inches in DBH removed, a fee based on an appraisal of the tree value by the city tree protection professional using trunk formula method in the current edition of the Guide for Plant Appraisal shall be required.	City Tree Account • Removal of existing trees in violation of this chapter will require an appraisal of the tree value by the qualified arborist using the trunk formula method in the current edition of the Council of Tree and Landscape Appraisers' Guide for Plant Appraisal. The cost of the appraisal shall be paid by the person(s) who removed existing trees in violation of this chapter and are jointly and severally liable. • In addition to tree replacement, the administrator shall require that the persons found in violation of this chapter, or the conditions of a permit pay the appraised value of the trees, paid into the city tree account.	Fee-in-lieu • For tree credit standard, if on-site trees cannot be retained and/or if new replacement trees cannot be planted, there is a *fee-in-lieu* option per BMC 19.26.100(5), where each *fee-in-lieu* will count as one (1) credit. • The fee-in-lieu amount shall cover the cost of a tree, installation (labor and equipment), maintenance for two (2) years, and fund administration. • The applicant shall pay the fee-in-lieu amounts to Burien upon completion of a site inspection and confirmation. • Fee-in-lieu monies may be used for Burien's urban forestry initiatives to achieve the objectives of the Green Burien Partnership Urban Forest Stewardship Plan and Climate Action Plan. See code for full reference.	City Tree Account • When on-site and off-site locations are unavailable, then the applicant shall pay an amount of money approximating the current market value of the replacement trees into the City's Tree Account.	Fee-in-lieu • When an applicant demonstrates that the project site cannot feasibly accommodate all the required replacement trees, the Director may allow the payment of a fee in lieu of replacement at the rate set forth in Chapter 3.01 SMC. • Fee Schedules, for replacement trees or a combination of reduction in the minimum number of replacement trees required and payment of the fee in lieu of replacement.

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Forest Practice Applications	TMC 16.08.038	https://lacey.municipal.codes/LMC/14.32.045	N/A	N/A	N/A	Undeveloped property proposing a conversion option harvest are required to meet a minimum tree density of 200 tree units per acre.	N/A
Exemptions	List of exempt activities in TMC 16.08.080.	List of exempt activities in LMC 14.32.050.	List of exempt activities in EMC 23.10.040.	List of exempt activities in LFPMC 16.14.050 Emergency Actions and LFPMC 16.14.100 Reasonable use exception	List of exempt activities in BMC 19.26.030(2).	List of exempt activities in OMC 16.60.040.	List of exempt activities in SMC 20.50.350.
Tree Removal on Private Property (non-development)	• Allows removal of up to six trees from any parcel of land in three consecutive calendar years. • Not applicable to heritage or historic trees, trees located in a greenbelt or greenbelt zone, wetlands or critical areas and their buffers or to tree topping. • Requires a letter of "waiver" for the exempt removals from the community development department prior to tree removal.	• Allows removal of up to three trees during a five-year period provided the minimum required ratio of four trees per each 5,000 SF of total lot area remain on the site or are replanted.	• Allows removal of non-significant trees as long as they are not protected by other means. • Allows for the removal of nuisance and hazard trees.	Reasonable use exception that allows the applicant to apply for an exception from the requirements of chapter 16.14 if application of chapter will prevent any reasonable economic use of the property.	• BMC 19.26.060-1 is a table of significant tree removal allowances. Private property owners can remove one tree per year on lots under 5,000 SF. • Up to five trees per year can be removed on lots greater than 20,001 SF.	• See OMC 16.60.040 Exemptions for tree removal provisions not associated with development. • Allows removal of up to six trees per acre, up to a total of six trees from an undeveloped parcel within any twelve consecutive month period.	Allows the removal of up to six significant trees from any property during a three-year period.

Appendix B

TMC 16.08 PROTECTION OF TREES AND VEGETATION

Chapter 16.08
PROTECTION OF TREES AND VEGETATION

Sections:

16.08.010 Short title.
This chapter shall be known and may be cited as the "tree and vegetation protection regulations" of the city.

(Ord. O2002-012, Amended, 07/16/2002; Ord. O94-029, Amended, 09/20/1994; Ord. 1190, Added, 05/16/1989)

16.08.020 Purposes.
The regulations are adopted for the following purposes:

A. To promote public health, safety and general welfare of the citizens of Tumwater, and to retain as many existing mature trees as possible, without preventing the reasonable development and maintenance of land;

B. To preserve and enhance the city's physical and aesthetic character by preventing indiscriminate removal or destruction of trees and ground cover, and by encouraging development that incorporates existing trees and ground cover into site development practices;

C. To retain trees and vegetation for their positive environmental effects including, but not limited to, the protection of wildlife habitat;

D. To promote identification and protection of trees that have historical significance; are unusual due to their size, species, or age; are unusual for their aesthetic quality; or have other values or characteristics that make them worthy of protection;

E. To prevent erosion and reducing the risk of landslides;

F. To protect environmentally sensitive areas;

G. To minimize surface water runoff and diversion. To reduce siltation and other pollution entering city storm sewer systems, other utility improvements, and the city's rivers, streams, and lakes;

H. To retain trees and ground cover to assist in abatement of noise, to provide wind breaks, and for improvement of air quality;

I. To promote building and site planning practices that are consistent with the city's natural topographical, soil, and vegetation features and to reduce landscaping costs for new development by utilizing existing trees and ground cover to help fulfill landscaping requirements;

J. To ensure prompt development, restoration and replanting, and effective erosion control of property after land clearing;

K. To promote conservation of energy;

L. To educate the public regarding urban forestry;

M. To implement objectives of the State Environmental Policy Act and Growth Management Act; and

N. To implement and further the city's comprehensive plan and other related regulations.

(Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O2000-012, Amended, 08/01/2000; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Amended, 09/29/1994; Ord. 1190, Added, 05/16/1989)

16.08.030 Definitions.

A. "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. Buildable area shall not include streams, flood hazard areas, geological hazard areas or wetlands and their buffers as defined in TMC Chapter 18.04. For the purpose of calculating required tree protection open space area, existing and newly dedicated city rights-of-way shall not be included.

B. "City" means the city of Tumwater, Washington.

C. "Code administrator" means the director of the community development department or the director's designated representative.

D. "Conversion option harvest plan (COHP)" means a voluntary plan developed by the landowner and approved by the Washington State Department of Natural Resources and the city of Tumwater, indicating the limits and types of harvest areas, road locations, and open space. This approved plan, when submitted to the Department of Natural Resources as part of the forest practice application and followed by the landowner, maintains the landowner's option to convert to a use other than commercial forest product production (releases the landowner from the six-year moratorium on future development).

E. Critical Root Zone or CRZ. Unless determined otherwise by the tree protection professional, the root protection zone for trees means an area contained inside an area on the ground having a radius of one foot for every inch of tree diameter, measured from four and one-half feet above ground level, but in no event shall the root protection zone be less than a six-foot radius.

F. “Drip line” of a tree means an imaginary line on the ground created by the vertical projections of the foliage at its circumference.

G. “Environmentally sensitive area” means any lands with the following characteristics:

1. “Geologically hazardous areas” as defined in TMC Chapter 16.20;

2. Lakes, ponds, stream corridors, and creeks as defined in TMC Chapter 16.32;

3. Identified habitats with which endangered, threatened, or sensitive species have a primary association as defined in TMC Chapter 16.32;

4. Wetlands as defined in TMC Chapter 16.28.

H. “Grading” means excavation, filling, or any combination thereof. Excavation and grading is governed by the International Building Code (IBC).

I. “Greenbelt” means certain designated areas of a project or development that are intended to remain in a natural condition, and/or private permanent open space, or serve as a buffer between properties or developments.

J. “Greenbelt zone” means any area so designated on the official zoning map of the city and subject to the provisions of TMC Chapter 18.30.

K. “Ground cover” means vegetation that is naturally terrestrial excluding noxious or poisonous plants and shall include trees that are less than six inches in diameter measured at four and one-half feet above ground level.

L. “Hazardous tree” means any tree that, due to its health or structural defect, presents a risk to people or property.

M. “Heritage tree(s)” means tree(s) designated by the city and their owners as historical, specimen, rare, or a significant grove of trees.

N. “Historic tree” means any tree designated as an historic object in accordance with the provisions of TMC Chapter 2.62.

O. “Land clearing” or “clearing” means any activity which removes or substantially alters by topping or other methods the vegetative ground cover and/or trees.

P. “Open space” means unoccupied land that is open to the sky and which may or may not contain vegetation and landscaping features, subject to the provisions in TMC 17.04.325 and 17.12.210.

Q. “Parcel” means a tract or plot of land of any size which may or may not be subdivided or improved.

R. “Qualified professional forester” is a professional with academic and field experience that makes them an expert in urban forestry. This may include arborists certified by the International Society of Arboriculture, foresters with a degree in forestry from a Society of American Foresters accredited forestry school, foresters certified by SAF, or urban foresters with a degree in urban forestry. A qualified professional forester must possess the ability to evaluate the health and hazard potential of existing trees, and the ability to prescribe appropriate measures necessary for the preservation of trees during land development. Additionally, the qualified professional forester shall have the necessary training and experience to use and apply the International Society of Arboriculture’s Guide for Plant Appraisal and to successfully provide the necessary expertise relating to management of trees specified in this chapter.

S. “Topping” is the removal of the upper crown of the tree with no consideration of proper cuts as per the current ANSI A300 Standard. Cuts created by topping create unsightly stubs that promote decay

within the parent branch and can cause premature mortality of a tree. Topping a tree is considered to be a removal, and may require a tree removal permit.

T. "Tree" means any healthy living woody plant characterized by one or more main stems or trunks and many branches, and having a diameter of six inches or more measured four and one-half feet above ground level. Healthy in the context of this definition shall mean a tree that is rated by a professional with expertise in the field of forestry or arbor culture as fair or better using recognized forestry or arbor cultural practices. If a tree exhibits multiple stems and the split(s) or separation(s) between stems is above grade, then that is considered a single tree. If a tree exhibits multiple stems emerging from grade and there is visible soil separating the stems, then each soil-separated stem is considered an individual tree. Appropriate tree species under six inches may be considered with approval of the city tree protection professional.

U. "Tree plan" is a plan that contains specific information pertaining to the protection, preservation, and planting of trees pursuant to this chapter.

V. "Tree protection open space" is a separate dedicated area of land, specifically set aside for the protection and planting of trees.

W. "Tree protection professional" is a certified professional with academic and field experience that makes him or her a recognized expert in urban tree preservation and management. The tree protection professional shall be either a member of the International Society of Arboriculture or the Society of American Foresters or the Association of Consulting Foresters, and shall have specific experience with urban tree management in the Pacific Northwest. Additionally, the tree protection professional shall have the necessary training and experience to use and apply the International Society of Arboriculture's Guide for Plant Appraisal and to successfully provide the necessary expertise relating to management of trees specified in this chapter.

(Ord. O2013-017, Amended, 08/19/2014; Ord. O2013-025, Amended, 01/07/2014; Ord. O2011-002, Amended, 03/01/2011; Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Amended, 09/20/1994; Ord. 1311, Amended, 04/07/1992; Ord. 1190, Added, 05/16/1989)

16.08.035 City tree protection professional.

In the city's interest of achieving professional assistance in the city's tree protection efforts and achieving consistency in tree protection decisions; the city shall contract with a "city tree protection professional" that qualifies as a tree protection professional under the definition of this chapter. The tree protection professional shall be responsible for providing the information and services required of a tree protection professional described herein.

Individual applicants will be responsible for payment of costs of the tree protection professional for projects necessitating work to be performed by the tree protection professional with the exception that the code administrator may waive payment by the applicant for minor work of the tree protection professional in determining an exempt project; provided however, that the city shall be responsible for billing and collecting costs charged to the applicant and transferring payment to the tree protection professional unless the city has opted for some other mechanism of providing for the costs, such as inclusion of costs in application fees.

(Ord. O2002-012, Amended, 07/16/2002; Ord. O97-029, Added, 03/17/1998)

16.08.038 Forest practice applications.
Pursuant to RCW 76.09.240, requiring local jurisdictions to set standards for and to process class IV forest practice applications, such permits shall be processed as a land clearing permit, and shall meet the requirements of this chapter.

A. The application of this chapter to forest practice activities regulated by the Washington State Forest Practices Act (Chapter 76.09 RCW) shall be limited to:

1. General forest practices.

B. This chapter is intended to allow the city of Tumwater to assume jurisdiction for approval of general forest practices, approvals occurring in the city of Tumwater, as authorized under the Washington State Forest Practices Act, Chapter 76.09 RCW. Until such time as jurisdiction for these permits is transferred to the city by the State Department of Natural Resources, the city will act as the State Environmental Policy Act (SEPA) lead agency for all general forest practice approvals occurring within the city limits. This chapter shall rely upon existing definitions contained within the Washington State Forest Practices Act (Chapter 76.09 RCW), Rules for the Washington State Forest Practices Act (Chapter 222-16 WAC), and the Tumwater Municipal Code.

(Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Added, 07/16/2002)

16.08.040 Tree account.
There is hereby established within the city a "tree account" for the purposes of acquiring, maintaining and preserving wooded areas, and for planting and maintaining trees within the city.

A. Collections and Deposits. All fines collected for violations of this chapter shall be deposited into the tree account. All donations and mitigation fees collected related to the preservation of trees or the enhancement of wooded buffer areas shall also be deposited into the tree account.

B. Maintenance of Account. The tree account shall be maintained by the finance director as a separate, interest-bearing account.

C. Use of Funds. Funds in the tree account shall be used only upon appropriation by the city council. Funds may be withdrawn from the tree account with the approval of the code administrator, and may be used for any purpose consistent with the intent of this chapter. Funds used to plant trees may be used only on city-owned property, or on property upon which the city has been granted an easement for the purpose of establishing or maintaining trees or other vegetation.

(Ord. O2002-012, Amended, 07/16/2002; Ord. O94-029, Added, 09/20/1994)

16.08.050 Permit required – Applications – Requirements – Processing – Conditions of issuance.
A. No person, corporation, or other legal entity not exempt under TMC 16.08.080 shall engage in land clearing or tree removal in the city without having received a land clearing permit.

B. Requirement Established. The application for land clearing permit shall be submitted with any project permit as defined in TMC 14.02.020(O), including single-family and duplex structures unless a land clearing permit was previously reviewed as part of prior project permit. A tree protection plan is required to obtain a land clearing permit and is also required for any land development not exempt under TMC 16.08.080. The tree protection plan shall be developed by a qualified professional forester and be submitted in conjunction with other environmental submittals and site plan development permits. For single-family homes on lots created prior to November 1994, the applicant has the option of using the city tree protection professional to prepare the permit application. This service will be provided at the same hourly rates charged to the city under its contractual arrangement with the tree protection professional.

C. An application for a land clearing permit shall be submitted on a form provided by the city. Accompanying such form shall be a report which includes the following information:

1. General vicinity map;

2. Date, north arrow and scale;

3. Property boundaries, the extent and location of proposed clearing and major physical features of the property (streams, ravines, etc.);

4. Tree Inventory. Drawn to scale on the preliminary or conceptual site plan: a map delineating vegetation types. Each type should include the following information:

a. Average trees and basal area per acre, by species and six-inch diameter class. For nonforested areas, a general description of the vegetation present.

b. Narrative description of the potential for tree preservation for each vegetation type. This should include soils, wind throw potential, insect and disease problems, and approximate distance to existing and proposed targets.

c. Description of any off-site tree or trees, which could be adversely affected by the proposed activity;

5. Tree Protection Plan. Drawn to scale on the site plan, grading and erosion control and landscape plans. It should include the following information:

a. Surveyed locations of perimeters of groves of trees and individual trees to be preserved, adjacent to the proposed limits of the construction. General locations of trees proposed for removal. The critical root zones of trees to be preserved shall be shown on the plans.

b. Limits of construction and existing and proposed grade changes on site.

c. Narrative description, buildable area of the site, and graphic detail of tree protection, and tree maintenance measures required for the preservation of existing trees identified to be preserved.

d. Timeline for clearing, grading and installation of tree protection measures.

e. Final tree protection plan will be drawn to scale on the above described plans and submitted with the final application packet;

6. Tree Replacement Plan. Drawn to scale on the site and landscape plans. The tree replacement plan shall be developed by a licensed Washington landscape architect, Washington certified nursery professional, ISA certified arborist, board certified horticulturist, qualified professional forester or Washington certified landscaper. It should include the following information:

a. Location, size, species and numbers of trees to be planted.

b. Narrative description and detail showing any site preparation, installation and maintenance measure necessary for the long-term survival and health of the trees.

c. Narrative description and detail showing proposed locations of required tree planting, site preparation, installation and maintenance within critical root zones of preserved groups or individual trees.

d. Cost estimate for the purchase, installation and three years' maintenance of trees;

7. A timeline for implementation and monitoring of the tree protection, and/or replacement plan;

8. A plan indicating how the site will be revegetated and landscaped;

9. A proposed time schedule for land clearing, land restoration, revegetation, landscaping, implementation of erosion controls, and any construction of improvements;

10. Information indicating the method to be followed in erosion control and restoration of land during and immediately following land clearing;

11. A note indicating that the city will have the right of entry upon the subject property for the purpose of performing inspections consistent with the provisions of this chapter;

12. The approved tree protection plan map will be included in contractor's packet of approved plans used for construction on the project; and

13. Other information as deemed appropriate to this chapter and necessary by the code administrator or city tree protection professional.

D. In addition to the requirements noted in subsection C of this section, on timbered property greater in size than one acre or commercial property with more than fifteen trees, or other sites the city deems necessary because of special circumstances or complexity, the code administrator may require review of the site and proposed plan and submittal of a report by the city's tree protection professional for compliance with the requirements of this chapter.

Further provided, that the code administrator may modify the submittal requirements of subsections C and D of this section, on individual applications where the information is not needed or is unavailable.

E. Each application shall be submitted with a fee established by resolution of the city council, to help defray the cost of handling the application, no part of which fee is refundable.

F. The code administrator shall notify the applicant whether the application is complete within twenty-eight calendar days of receipt of the application. If incomplete, the code administrator shall indicate in the notice the information required to make the application complete. The code administrator shall approve, approve with conditions or deny the permit within thirty calendar days of receipt of the complete application, or within thirty calendar days of completion of any environmental review, whichever is later. For applications such as site development proposals where there is more than a land clearing permit pending, the code administrator shall, whenever feasible, coordinate reviews, notices and hearings, and act upon the land clearing permit concurrently with other pending permits.

G. Any permit granted under this chapter shall expire eighteen months from the date of issuance, unless said permit is associated with another development permit. If it is associated with another development permit, the restrictions and deadlines of that approval will apply. Upon a written request, a permit not associated with another development permit may be extended by the code administrator for one six-month period. Approved plans shall not be amended without being resubmitted to the city. Minor changes consistent with the original permit intent will not require a new permit fee or full application standards to be followed. The permit may be suspended or revoked by the city because of incorrect information supplied or any violation of the provisions of this chapter.

H. Once issued, the permit shall be posted by the applicant on the site, in a manner so that the permit is visible to the general public.

(Ord. O2017-022, Amended, 12/05/2017; Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Amended, 09/20/1994; Ord. 1190, Added, 05/16/1989)

16.08.060 Performance and maintenance bond may be required.

A. The code administrator may require bonds and bond agreements in such form and amounts as may be deemed necessary to assure that the work shall be completed in accordance with the permit. Bonds, if required, shall be furnished by the applicant or property owner. A bond agreement shall provide assurance that the applicant has sufficient right, title and interest in the property to grant the city all rights set forth in the agreement.

B. In lieu of a bond, the applicant may file assigned funds or an instrument of credit with the city in an amount equal to that which would be required in a bond.

C. The amount of bonds or other assurance instrument shall not exceed the estimated cost of the total restoration, revegetation, planting or landscaping work planned, as determined by the code administrator.

D. The duration of any bond or other required surety shall be not less than three years from the date that said restoration, revegetation, planting or landscaping has been accepted by the code administrator.

(Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O94-029, Amended, 09/20/1994; Ord. 1190, Added, 05/16/1989)

16.08.070 Standards.

All land clearing not exempt under TMC 16.08.080 shall conform to the approved plan and the following standards and provisions unless alternate procedures that are equal to or superior in achieving the purposes of this chapter are authorized in writing by the code administrator:

A. No land clearing and/or ground surface level changes shall occur in a greenbelt zone as delineated on the official zoning map except as required for uses permitted in that zone. In addition, such land clearing and/or ground surface changes shall be subject to all other applicable standards and regulations;

B. Land clearing in designated greenbelt, open space, tree tract or buffer areas of approved and recorded subdivisions or approved projects which would substantially alter the character or purpose of said greenbelt or buffer areas is prohibited, except in cases involving land clearing plans approved by the code administrator for removal of hazard trees, invasive or noxious plant species and replanting with native plant and tree species;

C. Erosion control measures shall be provided by the applicant's professional engineer, in conformance with the Drainage Design Erosion Control Manual for the Thurston Region, Washington, as currently written and subsequently amended. The erosion control measures shall be reviewed and subject to approval by the code administrator. The requirement for a professional engineer may be waived by the code administrator on a case-by-case basis;

D. Land clearing shall be accomplished in a manner that will not create or contribute to landslides, accelerated soil creep, settlement and subsidence on the subject property and/or adjoining properties;

E. When land clearing occurs that does not include development, the proposal shall contain provisions for the protection of natural land and water features, vegetation, drainage, retention of native ground cover, and other indigenous features of the site;

F. Land clearing shall be accomplished in a manner that will not create or contribute to flooding, erosion, or increased turbidity, siltation, or other form of pollution in a watercourse;

G. Land clearing in wetlands, and fish and wildlife habitat areas shall be in accordance with the provisions of TMC Chapter 16.28, Wetland Protection Standards, and TMC Chapter 16.32, Fish and Wildlife Habitat Protection;

H. During the months of November, December, and January, no land clearing shall be performed in areas with average slopes of fifteen percent or greater, or any slopes of forty percent or greater;

I. During the months of November, December, and January, no land clearing shall be performed in areas with fine-grained soils and a slope greater than five percent. For the purposes of this section, fine-grained soils shall include any soil associations which are classified in hydrologic soil groups C or D, as mapped in the Thurston County Soil Survey, or as determined by a qualified soil scientist;

J. Land clearing shall be undertaken in such a manner as to preserve and enhance the city's aesthetic character. The site shall be revegetated and landscaped as soon as practicable, in accordance with the approved revegetation plan. Where the construction schedule does not provide for revegetation of the site prior to October 15 of any year, all disturbed areas shall be hydro seeded or otherwise revegetated on an interim basis. The revegetation plan shall include plantings along public streets and adjoining property boundaries, especially between areas of differing intensities of development. For land clearing permits that are part of a specific development proposal, land use development shall be initiated or a vegetative screen or buffer established within six months of the date of initiation of land clearing activities;

K. Land clearing shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time, consistent with the construction schedule. Provisions shall be made for interim erosion control measures;

L. Land clearing activities shall be limited to the hours of 7:00 a.m. to 8:00 p.m. on weekdays and 9:00 a.m. to 8:00 p.m. on Saturdays in accordance with TMC Chapter 8.08;

M. Open burning of land clearing debris is prohibited. Slash shall be properly disposed of off site or chipped and applied to the site within six months of the completion of the land clearing. Chipped material deposited on the site shall be spread out or other means used to prevent fire hazard;

N. Any trees to be retained shall be flagged or otherwise marked to make it clear which tree or groups of trees are to be retained;

O. Any trees or groups of trees to be retained shall have temporary fencing installed around the critical root zone[5]. Temporary fencing must be adequate to protect the critical root zone of trees designated for retention. On construction sites where circumstances warrant, the code administrator may require more substantial tree protection fencing, as necessary, to protect intrusion of construction activity into the CRZ areas. Machinery and storage of construction materials shall be kept outside of the CRZ of trees designated for retention. The code administrator may require fencing beyond the CRZ if, in the code administrator's determination, such additional protection is needed to protect the tree from damage. Trees designated for retention shall not be damaged by scoring, ground surface level changes,

[5]Unless determined otherwise by the tree protection professional, the critical root protection zone for trees means an area contained inside an area on the ground having a radius of one foot for every inch of tree diameter, measured from four and one-half feet above ground level, but in no event shall the critical root zone be less than a six-foot radius.

compaction of soil, attaching objects to trees, altering drainage or any other activities that may cause damage of roots, trunks, or surrounding ground cover;

P. Any trees designated for retention shall be field verified by the city tree protection professional before land clearing begins;

Q. Not more than thirty percent of the trees on any parcel of land shall be removed within any ten-year period, unless the clearing is accomplished as part of an approved development plan. Such clearing shall be done in such a way as to leave healthy dominant and codominant trees well distributed throughout the site (taking into account the interdependency of the trees) unless, according to the determination of the city tree protection professional, this requirement would conflict with other standards of this section. For every tree removed at least one replacement tree shall be planted. Replacement trees shall consist of seedlings of the same or similar species to those trees removed, which shall be at least two years old. In lieu of this planting of replacement trees, the applicant may contribute a cash payment to the city's tree account in an amount equal to one hundred twenty-five percent of the retail value replacement cost. The time schedule for the planting of replacement trees shall be specified in the approved plan. If a land clearing permit is applied for as part of a development plan within ten years of clearing under this subsection, all trees removed under this standard will be counted towards required tree retention/replacement when a land clearing permit is issued;

R. When land clearing is performed in conjunction with a specific development proposal not less than twenty percent of the trees, or not less than twelve trees per acre (whichever is greater), shall be retained.

Provided, however, where it can be demonstrated that the trees on a site were planted as part of a commercial Christmas tree farm, then no less than seventeen percent or twelve trees per acre, whichever is less, shall be retained. Commercial tree farm status must be verified by the city tree protection professional.

1. Size, Type and Condition of Retained Trees.

    a. For the purpose of calculating tree retention standards, trees twenty-four inches or greater in diameter measured four and one-half feet above ground level shall count as two trees.

    b. Species such as willow, cottonwood, poplar and other species, the roots of which are likely to obstruct or injure site improvements, sanitary sewers or other underground utilities, shall not be considered trees for the purpose of calculating tree retention standards if located within the buildable portion of the lot.

    c. A tree must meet the following standards in order to be counted for the purpose of meeting tree retention standards:

        i. Must have a post-development life expectancy of greater than ten years;

        ii. Must have a relatively sound and solid trunk with no extensive decay or significant trunk damage;

        iii. Must have no major insect or pathological problems;

        iv. Must have no significant crown damage;

        v. Should be fully branched and generally proportional in height and breadth for the tree age;

        vi. Must be windfirm in their post-development state.

2. These standards may be waived or modified by the code administrator if the applicant provides substantial evidence demonstrating that strict compliance would make reasonable use of the property impracticable for three or more of the following reasons:

a. Removal of the tree or trees is needed to enable use of a solar system. A waiver for this reason must be accompanied by a bond assuring completion of the solar system within the timeframe associated with the underlying building permit issued for the project.

b. The tree retention standard cannot be achieved because of the necessity of complying with applicable zoning and development requirements including, but not limited to, residential densities, open space requirements for active recreation, floor area ratios (FAR), parking requirements, stormwater requirements, street construction requirements, etc.

c. The tree retention standard cannot be achieved because the tree or trees do not have a reasonable chance of survival once the site is developed or modified and may pose a threat to life or property if retained.

d. The applicant has made reasonable efforts to reconfigure or reduce the building footprint(s), site access, on-site utility systems and parking area(s) to avoid impacts to trees on the property.

e. For commercial and industrial land uses, the project pro forma demonstrates that economically viable use of the property cannot be achieved while meeting the tree retention standards in this chapter. This standard is presumed to be met without a pro forma if the area disturbed by development of the property would be less than eighty-five percent of the land.

f. The granting of the waiver or modification will not result in increasing the risk of slope failure, significant erosion or significant increases in surface water flows that cannot be controlled using best management practices.

3. Where the standard is waived or modified, the applicant shall plant not less than three trees for each tree cleared in excess of the standard.

a. These replacement trees shall be at least two inches in diameter measured at a height of six inches above the root collar.

b. Replacement trees shall be planted on the same parcel as the proposed development, unless the code administrator approves of an alternate location.

c. Replacement trees must first be planted in a "tree protection open space." The tree protection open space shall be comprised of a minimum of five percent of the buildable area for the purpose of retaining existing trees and/or for the planting of replacement trees. Replacement trees in the tree protection open space shall be a mix of native coniferous and deciduous trees. The tree protection open space shall be a contiguous area. The tree protection open space is required to be eighty percent covered by tree canopy after fifteen years utilizing retained and/or replacement trees. Approved trees and their CRZ area within a critical area buffer may count for up to fifty percent of the required tree protection open space. Stormwater facilities can be considered as part of the tree protection open space if trees can be retained and/or planted successfully and not disable the operating functions of the facility.

d. If more replacement trees are required than necessary to meet the canopy requirement in the tree protection open space, then these trees (either native and/or nonnative species) can be planted elsewhere on the parcel(s).

e. If the city tree protection professional determines that more replacement trees are required than can be planted in the tree protection open space and the rest of the parcel, then the applicant shall contribute a cash payment to the city's tree account in an amount determined by the current city fee resolution.

4. In situations where a parcel of land to be developed does not meet the retention standards above in an undeveloped state, the applicant shall be required to reforest the site to meet the applicable standard outlined above at a 1:1 ratio as a condition of project approval.

5. In determining which trees shall be given the highest priority for retention, the following criteria shall be used:

a. Heritage or historic trees;

b. Trees which are unusual due to their size, age or rarity;

c. Trees in environmentally sensitive areas;

d. Trees that act as a buffer to separate incompatible land uses;

e. Trees which shelter other trees from strong winds that could otherwise cause them to blow down;

f. Trees within greenbelts, open space, tree protection open space or buffers;

g. Trees with significant habitat value as identified by a qualified wildlife biologist or by the city tree protection professional; and

h. Trees which are part of a continuous canopy or which are mutually dependent, as identified by a qualified professional forester or the city tree protection professional;

S. In addition to the provisions of this chapter, the cutting or clearing of historic trees requires the issuance of a certificate of appropriateness in accordance with TMC Chapter 2.62.

(Ord. O2013-017, Amended, 08/19/2014; Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Added, 09/20/1994)

16.08.072 Maintenance requirements.

A. Maintenance Requirement. Trees are to be maintained in a vigorous and healthy condition, free from diseases, pests and weeds. Trees which become diseased, severely damaged or which die shall be removed by the owner as soon as possible but no later than sixty days after notification by the city. As it pertains to this section, all replacement trees that die shall be replaced with healthy trees of the same size and species as required by the approved tree protection plan for the property. If retained trees die due to construction damage or negligence on the part of the applicant, the city tree protection professional shall determine the appraised landscape value of the dead trees, and the applicant shall plant the equivalent value of trees back onto the site. In the event that space is not available for the required replacement trees (as determined by the city tree protection professional), the equivalent value shall be paid into the tree fund.

B. For areas dedicated as tree protection open space areas, street trees and single-family residential land divisions, the maintenance requirement of this section shall be in effect for three years from the date the final plat is approved or the trees are planted. The tree plan shall be a condition of approval

and identified on the face of the plat. The applicant shall also execute a covenant in a form agreeable to the city, which shall require the applicant and his successors to comply with the maintenance requirement of this section. The covenant shall obligate both the property owner and the homeowner's association and shall be recorded with the county auditor. The recording fee shall be paid by the applicant.

C. For multifamily residential, commercial, and industrial developments, the maintenance requirement for all trees covered by the tree plan shall apply in perpetuity. The applicant shall execute a covenant in a form agreeable to the city, which shall require that the applicant and his successors comply with the maintenance requirement imposed by this section. The covenant shall be binding on successor property owners and owners' associations. The covenant shall be recorded with the county auditor and the recording fee shall be paid by the applicant.

D. Maintenance Agreement. Each development to which the maintenance requirement for this chapter applies and that contain a heritage tree(s) shall also be subject to a maintenance agreement. The code administrator shall require the applicant to execute a maintenance agreement with the city, in a form acceptable to the city attorney, which shall include the provisions of the maintenance requirement in this chapter, to ensure the survival and proper care of any heritage trees identified in the tree plan.

E. Failure to Maintain. Retained trees, replacement trees and street trees as per the requirements of this chapter and/or TMC Chapter 18.47, Landscaping, shall be maintained according to the American National Standards Institute, current edition of the American National Standards, ANSI A300. Failure to regularly maintain the trees as required in this section shall constitute a violation of this chapter and, if applicable, the plat covenant.

(Ord. O2006-014, Added, 04/17/2007)

16.08.075 Heritage trees designated.

A. Trees can be nominated for designation by citizens, the Tumwater tree board, or city staff.

1. Application for heritage tree designation must be submitted to the community development department. The application must include a short description of the trees, including address or location, and landowner's name and phone number. The application must be signed by both the landowner and nominator.

2. The tree board reviews the application and makes a recommendation to the city council.

3. All heritage trees will be added to city tree inventory and public works maps.

B. Trees that are designated as heritage trees shall be classified as follows:

1. Historical – A tree which by virtue of its age, its association with or contribution to a historical structure or district, or its association with a noted citizen or historical event.

2. Specimen – Age, size, health, and quality factors combine to qualify the tree as unique among the species in Tumwater and Washington State.

3. Rare – One or very few of a kind, or is unusual in some form of growth or species.

4. Significant Grove – Outstanding rows or groups of trees that impact the city's landscape.

C. The city will provide an evaluation and recommendation for tree health and care and will provide up to one inspection annually upon request of the landowner. The city may, at its discretion, provide a plaque listing the owner's name and/or tree species/location.

D. Heritage Tree Removal.

1. A tree removal permit is required for removal of any heritage tree(s).

2. The city tree protection professional shall evaluate any heritage trees prior to a decision on the removal permit. Recommendations for care, other than removal, will be considered.

3. Dead or hazardous trees are exempt from a tree removal permit after verification by the city tree protection professional.

E. Heritage Tree Declassification. Any heritage tree may, at any time, be removed from heritage tree status at the request of the landowner after providing two weeks' written notice to the community development department. Unless an agreement can be reached to preserve the tree, the tree will be removed from the heritage tree inventory list and the plaque, if any, will be removed.

(Amended during 2011 reformat; O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O2000-012, Added, 07/18/2000)

16.08.080 Exemptions.

The following shall be exempt from the provisions of this chapter; provided however, the code administrator may require reasonable documentation verifying circumstances associated with any proposal to remove trees under any of the following exemptions:

A. Land clearing in emergency situations involving immediate danger to life or property. For every tree cleared under this exemption, at least one replacement tree shall be planted. Except for the number of trees, replacement trees shall conform to the standard for replacement trees described in TMC 16.08.070(R);

B. Land clearing associated with routine maintenance by utility companies such as the power company and telephone company. Utility companies shall notify the community development department at least two weeks prior to the start of work and shall follow appropriate vegetation management practices;

C. Land clearing performed within any public right-of-way or any public easement, when such work is performed by a public agency and the work relates to the installation of utilities and transportation facilities (such as streets, sidewalks and bike paths). To the greatest extent possible, all such work shall conform to the standards set forth in this chapter;

D. Land clearing within ten feet (when required for construction) of the perimeter of the single-family or duplex dwellings and associated driveways or septic systems must be indicated on the plot plan submitted to the building official with an application for a building permit. This exemption does not apply to land clearing located within environmentally sensitive areas, or to areas subject to the provisions of the shoreline master program;

E. Clearing of dead, diseased, or hazardous trees, after verification by the city tree protection professional. For every tree cleared under this exemption, at least one replacement tree shall be planted. Except for the number of trees, replacement trees shall conform to the standard for replacement trees described in TMC 16.08.070(R);

F. Clearing of trees that act as obstructions at intersections in accordance with the municipal code;

G. The removal of not more than six trees from any parcel of land in three consecutive calendar years. This exemption does not apply to heritage or historic trees, or to trees located in a greenbelt or greenbelt zone, or in wetlands or critical areas and their buffers or to tree topping. A letter of "waiver" for the exempt removals must be obtained from the community development department prior to tree removal;

H. Land clearing associated with tree farming operations specifically preempted by Chapter 76.09 RCW, Washington Forest Practices Act; provided, that a harvesting and reforestation plan is submitted to the code administrator prior to any land clearing;

I. Clearing of noxious ground cover for the purposes of utility maintenance, landscaping, or gardening. This exemption applies solely to ground cover, for protected trees clearing must conform to subsection G of this section;

J. Clearing of trees that obstruct or impede the operation of air traffic or air operations at the Olympia Airport. The tree replacement standards of this chapter must be met. Trees should be replanted outside the air operations area;

K. Clearing of not more than six trees every three consecutive calendar years on developed properties, when such clearing is necessary to allow for the proper functioning of a solar-powered energy system. Such clearing may be done only after verification of the need to clear the trees, issuance of a waiver letter, and the issuance of a building permit for such a system by the code administrator.

(Amended during 2011 reformat; O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Amended, 09/20/1994; Ord. 1311, Amended, 04/07/1992; Ord. 1190, Added, 05/16/1989)

16.08.090 Alternative plans.

Required tree mitigation must conform to the standards contained in this chapter unless alternate plans that are equal to or superior in achieving the purposes of this chapter are authorized in writing by the code administrator. The code administrator may modify or waive the requirements of this chapter only after consideration of a written request for any of the following reasons:

A. Special circumstances relating to the size, shape, topography or physical conditions, location, or surroundings of the subject property, or to provide it with use rights and privileges permitted to other properties in the vicinity and zone in which it is located;

B. Improvement as required without modification or waiver would not function properly or safely or would not be advantageous or harmonious to the neighborhood or city as a whole;

C. The proposed modification would result in an increased retention of mature trees and/or naturally occurring vegetation on the site;

D. The proposed modification represents a superior result than that which could be achieved by strictly following the requirements of this chapter, the proposed modification complies with the stated purpose of TMC 16.08.020 and the proposed modification will not violate any city of Tumwater codes or regulations.

Any modifications under this chapter shall be as limited as possible to achieve the aim of relating required mitigation for tree protection to the impacts caused by the individual development.

(Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. 1190, Added, 05/16/1989)

16.08.100 Appeal procedure.

Any person aggrieved by a decision or an action of the code administrator in the enforcement or implementation of this chapter may, within fourteen calendar days of such decision or action, file a written appeal to the hearing examiner. Any decision of the hearing examiner may be appealed to the Thurston County superior court in accordance with the provisions of TMC Chapter 2.58.

(Ord. O2017-022, Amended, 12/05/2017; Ord. O2006-014, Amended, 04/17/2007; Ord. O2002-012, Amended, 07/16/2002; Ord. O94-029, Amended, 09/20/1994; Ord. 1259, Amended, 11/06/1990; Ord. 1190, Added, 05/16/1989)

16.08.110 Violation – Criminal penalties.

A. Any person who violates the provisions of this chapter or fails to comply with any of the requirements shall be guilty of a misdemeanor and subject to the penalties set forth in TMC 1.12.010. In keeping with the city's concern regarding protection of the environment, the court should consider the imposition of minimum fines of no less than $1,000 per occurrence. Each day such violation continues shall be considered a separate, distinct offense. In cases involving land clearing in violation of this chapter, the clearing of any area up to the first acre shall be considered one offense, and the clearing of each additional acre and of any additional fractional portion that does not equal one more acre shall each be considered a separate and distinct offense.

B. Any person who commits, participates in, assists or maintains such violation may be found guilty of a separate offense and suffer the penalties as set forth in subsection A of this section.

C. In addition to the penalties set forth in subsections A and B of this section, any violation of the provisions of this chapter is declared to be a public nuisance and may be abated through proceedings for injunctive or similar relief in superior court or other court of competent jurisdiction.

D. Upon determination that a violation of the provisions of this chapter has occurred, the building official shall withhold issuance of building permits for the affected property until corrective action is taken by the responsible party. However, if mitigating circumstances exist and reasonable commitments for corrective action are made, the building official may issue building permits. Such corrective action may include:

1. Restoration and replanting of surface vegetation with plant material similar in character and extent as existed prior to the unauthorized clearing;

2. Implementation of drainage and erosion control measures;

3. Replanting of trees equal in value to those lost through unauthorized clearing. The value of the trees removed shall be determined by the city's tree protection professional using landscape tree appraisal methodology published in the current edition of the International Society of Arboriculture's Guide for Plant Appraisal.

(Ord. O2002-012, Amended, 07/16/2002; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Amended, 09/20/1994; Ord. 1311, Amended, 04/07/1992; Ord. 1190, Added, 05/16/1989)

16.08.120 Violation – Civil penalties – Presumption – Other remedies.

A. As a supplement or alternative to the remedies set forth in TMC 16.08.110, the code administrator shall have the authority to seek civil penalties for violation of the provisions of this chapter.

Any person, corporation, partnership or other entity being the owner of real property or holder of timber rights upon such property who violates the provision of this chapter or fails to comply with any of its requirements shall upon a proper showing be deemed to have committed a class 1 civil infraction as defined by TMC 1.10.120(D)(1). Civil liability shall also attach to others who violate the provisions of this chapter, whether or not such violation occurs at the direction of the owners or holder of timber rights.

As provided by law, the Tumwater municipal court is hereby vested with jurisdiction to hear civil infraction cases under this chapter. Said cases shall be heard by the court without jury and upon a finding that the infraction has been committed by a preponderance of the evidence.

The code administrator shall have the authority to charge as a separate violation each such tree removed or destroyed.

B. Presumption. For purposes of administration and prosecution of alleged violations of this chapter, there is hereby created a rebuttable presumption that the person whose name appears on tax records of the Thurston County assessor, with respect to the real property in question, has responsibility for ensuring that violations of provisions of this chapter do not occur on the property in question.

C. In addition to the penalties set forth in this chapter, any violation of the provisions of this chapter is declared to be a public nuisance and may be abated through proceedings for injunctive or similar relief in superior court or other court of competent jurisdiction.

D. Upon determination that a violation of the provisions of this chapter has occurred, the building official shall withhold issuance of building permits for their affected property until corrective action is taken by the responsible party. However, if mitigating circumstances exist and reasonable commitments for corrective action are made, the building official may issue building permits. Such corrective action may include:

1. Restoration of surface vegetation with plant material similar in character and extent as existed prior to the unauthorized clearing;

2. Implementation of drainage and erosion control measures;

3. Replanting of trees equal in value to those lost through unauthorized clearing. The value of the trees removed shall be determined by the city's tree protection professional using landscape tree appraisal methodology published in the current edition of the International Society of Arboriculture's Guide for Plant Appraisal.

(Amended during 2011 reformat; O2002-012, Amended, 07/16/2002; Ord. O97-029, Amended, 03/17/1998; Ord. O94-029, Added, 09/20/1994)