

City of Duvall Chapter 14.40 - TREE PROTECTION

14.40.010 – Purpose.

The purposes of this chapter are to: avoid the removal of stands of trees and significant trees in order to maintain the quality of Duvall's urban environment; encourage the protection of stands of trees and significant trees to the maximum extent possible in the design of new developments, buildings, roadways and utilities; protect exceptional trees that, because of their unique species, age, size, location, and health are an important community resource; mitigate the environmental and aesthetic consequences of tree removal in land development through on- and off-site supplemental tree planting to achieve a goal of protecting significant trees and increasing tree canopy cover throughout the city of Duvall; provide measures to protect trees that may be impacted during construction; maintain and protect the public health, safety and general welfare.

The many benefits of healthy trees and vegetation contribute to Duvall's quality of life by:

- A. Minimizing the adverse impacts of land disturbing activities and impervious surfaces such as runoff, soil erosion, land instability, sedimentation and pollution of waterways, thus reducing the public and private costs for storm water control/treatment and utility maintenance;
- B. Improving the air quality by absorbing air pollutants, mitigating the urban heat island effect, assimilating carbon dioxide and generating oxygen, and decreasing the impacts of climate change;
- C. Reducing the effects of excessive noise pollution;
- D. Providing cost-effective protection from severe weather conditions with cooling effects in the summer months and insulating effects in winter;
- E. Providing visual relief and screening buffers;
- F. Providing recreational benefits;
- G. Providing habitat, cover, food supply and corridors for a diversity of fish and wildlife; and
- H. Providing economic benefit by enhancing local property values and contributing to the region's natural beauty, aesthetic character, and livability of the community.
- I. Providing human health benefits for the citizens of Duvall, including improvements in air quality and mental health.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.020 – Applicability.

- A. DMC Section 14.40.025 applies to protection of exceptional trees, whether associated with development activity or not.
- B. DMC Section 14.40.030 applies to the removal of significant trees and exceptional trees not associated with a development activity, including on existing residential, commercial, and other developed lots, and within existing improved public right-of-ways.
- C. DMC Sections 14.40.040 through 14.40.090 apply to applications for new developments, including but not limited to: short or long subdivisions, site plans, building permits, conditional use permits, and development agreements. Removal of significant trees on redevelopable or undeveloped lots are subject to the same provisions as applications for new developments.
- D. DMC Sections 14.40.100 through 14.40.120 apply to tree protection on developed lots, developed public right-of-ways, and applications for new developments.

- E. For the purposes of this chapter, a significant tree is any tree, other than red alder and cottonwood trees, that measures a minimum of ten (10) inches in diameter at breast height (DBH); see technical term definitions in Section 14.40.120 of this Chapter.
- F. For purposes of this chapter, an exceptional tree is any viable tree, which because of its unique combination of size and species, age, location, and health, is worthy of long-term retention, as determined by a qualified professional arborist representing the City; the definition of exceptional tree is provided along with further designation criteria in Section 14.40.120 of this Chapter. Exceptional trees shall include, but shall not be limited to, trees that have a diameter at breast height (DBH) that is equal to or greater than the threshold diameters listed for specific tree species in Section 14.40.120 of this Chapter.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.025 – Protection of exceptional trees.

[ENTIRELY NEW SECTION]

The following regulations shall apply to protection and limited allowances for removal of exceptional trees, whether occurring as part of a development proposal or not.

- A. Removal of exceptional trees shall not be allowed, except in the following circumstances:
 - 1. Where consistent with exemptions for hazard, dead, or dying trees and for emergency tree removal consistent with DMC 14.40.110.
 - 2. Where necessary for public roads and bridges within existing public right of ways and other essential public facilities.
 - 3. Where necessary for access to private development sites provided there are no feasible alternative alignments. Alternative access shall be pursued to the maximum extent feasible.
 - 4. For all other proposed impacts to exceptional trees: where proposed, it is presumed that an alternative development proposal exists; activities and uses shall be prohibited unless the applicant can demonstrate that all on-site alternative designs that would avoid or result in less impacts to exceptional trees, such as a reduction in the size, scope, configuration or density of the project, are not feasible.
- B. Where unavoidable impacts to exceptional trees are allowed consistent with subsection A of this section, replacement of exceptional trees shall be provided consistent with section 14.40.030 (for removal not associated with new development) and sections 14.40.050 (for removal associated with new development) of this Chapter, except that replacement shall be provided at a minimum of three (3) replacement trees for each exceptional tree removed.

14.40.030 – Tree removal – Not associated with development activity.

The following regulations shall apply to tree removal not associated with development activity, consistent with the Applicability section (14.40.020) of this Chapter:

- A. Submittal Requirements for Tree Removal Not Associated with Development Activity
 - 1. The city shall establish a tree removal request form to be used by property owners for compliance with tree removal standards of this section (14.40.030). The tree removal request form shall include guidance for minimum information that must be submitted, including:
 - a) A simple site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the approximate location of structures, driveways, access ways and easements.
 - b) For required replacement trees, a planting plan showing location, size and species of the new trees in accordance to standards set forth in this Chapter.

- c) Verification that there is no active application for development activity for the site,
 - d) Acknowledgement of any trees on the site that were required to be retained or planted as a condition of previous development activity or significant tree removal.
2. Property owners shall submit a tree removal request form for any requests for significant tree removal, consistent with the allowances of this section (14.40.030). City approval of the tree removal request shall be received before any removal of significant trees occurs, except for as provided by subsection F of this section.
 3. For proposed tree removal that includes any of the following conditions, the City shall require the applicant to submit a tree assessment completed by a qualified professional arborist:
 - a) A property with a tree removal request to remove an exceptional tree, even if the tree is determined to be nuisance, hazard, dead, or dying tree. Any such request may only be granted if also consistent with the limited allowances within 14.40.025; or
 - b) Any tree removal request within a Native Growth Protection Area (NGPA) or likely to be within one hundred and fifty (150) feet of a wetland, stream, or landslide hazard area.
- B. Existing residential, commercial, and other developed lots – significant tree removal. Any residential or commercial property owner may remove significant trees from a lot after providing the city with a tree removal request and receiving city approval, provided that the following criteria are met:
1. The tree(s) is not in a native growth protection area, sensitive area, or sensitive area buffer;
 2. The tree is not subject to the retention and maintenance requirements in place for five (5) years following approval of new development (section 14.40.090);
 3. The tree is not one of the last two (2) significant tree on the lot, unless identified as a nuisance, hazards, dead, or dying tree consistent with subsection E of this section.
 4. No more than two (2) significant trees may be removed within a one-year period;
 5. No more than five (5) significant trees may be removed within any five-year period.
 6. The property owner shall plant a minimum of one (1) replacement tree for each significant tree removed except in the following circumstances:
 - a) Replacement may be waived for existing lots where one (1) or more significant trees will remain for each 2,000 square feet of lot area;
 - b) If allowance for removal of one of the last two remaining significant trees is granted, replacement tree(s) shall be required consistent with the following ratios (by zoning):

Zoning classification	Number of replacement trees required
R4, R4.5	3
R6, R8	2
R12, R20 within MU zones	1
Non-residential zones	2

- C. Existing improved public right-of-way – significant tree removal. Removal of significant trees from existing improved public right-of-ways shall only be allowed under the following circumstances:
1. The tree(s) is not in a native growth protection area, sensitive area, or sensitive area buffer; and
 2. The tree(s) is determined to be a nuisance, hazard, dead, or dying, consistent with subsection E of this section; or removal is documented as unavoidable and necessary for repair and/or

improvements to public facilities, including roadways, sidewalks, utilities, and stormwater infrastructure. In either circumstance, a tree removal request shall be submitted to the director for concurrence; and

4. Any significant trees removed within the existing public right-of-way shall be replaced with a minimum of one (1) replacement tree for each significant tree removed. Replacement trees shall be selected and approved by the director as appropriate street trees, or if planted off-site within a park or open space area shall be appropriate native trees.
- D. Protection of supplemental trees and yard trees required at the time of original development, or required as replacement trees for previous significant tree removal actions:
1. Required supplemental trees and yard trees that are subject to the maintenance requirements for new development (section 14.40.090) shall not be removed during the five (5) year maintenance period. Following the maintenance period, all supplemental trees and yard trees shall be considered significant trees, even if below the minimum DBH size.
 2. Property owners shall be required to provide a Tree Removal Notification for removal of previously required supplemental, yard, and replacement trees, even if the tree proposed for removal is below the minimum DBH size for significant trees. Such trees shall always require replacement planting of one tree for each tree removed.
- E. Significant trees which are a nuisance, hazard, dead, or dying, may be removed after a tree removal request is submitted to the City by a property owner and/or homeowner's association, and the City provides concurrence that the proposed removal is warranted. In the event that a tree is not obviously dead, dying or a hazard, a tree risk assessment prepared by a qualified professional arborist describing how the tree(s) meet the definition of a hazard tree shall be submitted with the tree removal request. Nuisance trees must be documented as such in the tree removal request consistent with the nuisance tree definition in 14.40.120 of this Chapter. Nuisance, hazard, dead, or dying trees do not count toward the annual removal allowance set out in DMC Section 14.40.030.B. Tree replacement for such trees shall be at a one (1) tree to one (1) tree ratio
- F. Any tree on private property that poses an imminent threat to life or property may be removed without first submitting a Tree Removal Notification and receiving city approval. The property owner shall contact the city within seven days of removal to provide photographic evidence of threat for approval of exemption. The city retains the right to dispute the emergency and require that replacement trees/vegetation be replanted as mitigation.
1. Imminent danger means that the conditions of the situation make it an immediate threat of failing. An imminent danger includes, but is not limited to, a tree leaning from a storm event, breaking roots, obvious decay or defect in a trunk or branch, a new crack at branch or stem attachments, and hanging broken branches.
- G. A property owner and/or homeowner's association requesting to take out trees that are in a native growth protection area (NGPA), sensitive area, or sensitive area buffer shall only be permitted to remove such trees if an arborist determines they are dead, dying or hazard trees. For purposes of 14.40.030, sensitive areas shall include wetlands, streams, landslide hazard areas and associated buffers. The woody debris from the trees may be required to be retained in the NGPA or sensitive area after cutting down for habitat purposes. Debris from cut trees shall be cut in small enough sizes to distribute over a wide area and not smother desirable vegetation. A minimum of three (3) replacement trees shall be planted in the NGPA or sensitive area for each tree removed, and shall be native coniferous species appropriate to NGPA / sensitive area conditions unless otherwise permitted by the director. A larger number of smaller trees may be permitted by the director in lieu of replacement trees meeting the minimum size for replacement trees required by 14.40.030.F.
- H. Minimum Size for Replacement Trees. The required minimum size of a replacement trees required by 14.40.030 shall be six (6) feet tall for all conifers, and two (2) inch caliper for deciduous or broad-leaf evergreen trees, except where smaller trees are approved by the director consistent with 14.40030.G.

The installation and maintenance of replacement trees shall be pursuant to DMC 14.40.070 and 14.40.090 respectively.

- I. Tree replacement may be made through an in-lieu fee in accordance with DMC Section 14.40.070.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.040 – New development sites—Submittal requirements.

- A. On new development sites, a Preliminary Tree Assessment plan is required to be submitted with the initial land use application that sets out the following:
1. Overall site characterization of existing tree conditions. This characterization shall include:
 - a) A qualitative description of site forest conditions (stand age, dominant species, condition); and
 - b) Identification of site areas with groves of significant trees; and
 - c) Identification and description of tree and forest conditions adjacent to any on-site sensitive areas and buffers.
 - d) Identification of all likely exceptional trees across the site.
 2. Initial calculation of minimum tree credits required for the proposed development, and required portion of credit that must be achieved through tree retention, consistent with tree density requirements of 14.40.050.
 3. Initial identification of proposed areas for required tree retention, including rational and documentation of consistency with DMC Section 14.40.060, Priorities for Tree Retention.
- B. Following City approval of the retention proposal presented in the Preliminary Tree Assessment, a Tree Retention Plan is required to be submitted that sets out the following:
1. Survey of existing site tree condition, containing the following:
 - a) Engineered professional survey location point for every tree over ten inch (10") dbh on the site.
 - b) Size (dbh), species, location, and assessment of all trees proposed for retention to meet tree density requirements of 14.40.050. Significant trees that are on adjacent properties that have a critical root zone (CRZ) extending on to the property under application shall also be identified. Significant trees located along the outer edge of onsite sensitive areas buffers that have a CRZ extending into areas of proposed site development shall also be identified;
 - c) Size (dbh), species, and location of all exceptional trees across the development site and/or on adjacent properties that have a CRZ extending on to the property under application.
 - d) Location of sensitive areas, including buffer and type. Except for those significant trees located near the outer buffer edge, no arborist survey of individual trees within sensitive areas and associated buffers is required, as these areas are not considered in meeting tree density requirements for new development sites under 14.40.050.
 2. The Tree Retention Plan shall be prepared by a qualified professional arborist and shall include the following:
 - a) Site map with Tree ID number, species, diameter at four and one-half feet (4.5') above grade for all trees proposed for retention, including any identified exceptional trees, and a Tree Assessment Matrix with the description of each tree's health and viability. Evaluation should include identification of significant trees that are not viable for retention, based on health, high risk of failure due to structure, defects, unavoidable isolation (wind firmness), or

suitability of species, that are in areas that are not to be cleared by the proposed development.

- b) Location of limits of disturbance based on the CRZ around all trees proposed for retention and any special instructions for work within that protection area (hand-digging, tunneling, root pruning, maximum grade change). Adjusting fence locations to allow site work within the CRZ must be approved by the applicant's arborist and the director, and must be consistent with all requirements of DMC 14.40.080.
 - c) Discussion and approval of timing and installation of tree protection measures that must include fencing and be in accordance DMC Section 14.40.080. Measures may include trenching, mulching, pruning, tree care during construction, and post-construction requirements (long-term management).
 - d) Proposed location(s) and species of supplemental trees to be used when required, and including planting and maintenance specifications.
 - e) Provide a list of General Tree Protection Guidelines that covers all potential impacts to retained trees, and methods and procedures for working around retained trees properly. Guidelines shall be consistent with all requirements of DMC 14.40.080.
 - f) Plan shall include requirement and schedule for:
 - i. Pre-construction meeting with the applicant's qualified professional arborist and the city to confirm retained trees approve tree protection fence location, and agree on monitoring schedule for contract compliance based on work near retained trees.
 - ii. Requirement and method of reporting to city when significant work is required within the Inner Critical Root Zone (ICRZ) of any retained tree.
 - iii. Confirmation that the tree protection fences remain in place throughout the project
 - iv. Post construction meeting to confirm all trees have been retained, protected and planted per plan.
- C. The applicant shall be responsible for all costs associated with city review of such tree plans and for the costs related to qualified professional arborist field visits, plan development, and plan review.
- D. The applicant's tree retention plan shall be consistent with DMC Section 14.40.060, Priorities for tree retention. The applicant shall identify how their proposal meets DMC Section 14.40.060, including for trees on adjacent properties as described in subsection (A)(1) of this section.
- E. Significant trees proposed for retention shall be tagged and numbered for field verification at time of application submittal.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.050 – New development sites—Tree density requirements.

- A. Introduction. A minimum tree density approach is being used to retain as many viable trees as possible with new development activity. Unless otherwise exempted by this Chapter, the requirement to meet a minimum tree density applies to all new development activities, including: new single-family homes; residential subdivisions and short subdivisions; mixed used developments; commercial, retail, and office developments; industrial developments; municipal, park, and institutional developments; and utility developments.
 - 1. Tree retention or a combination of tree retention and supplemental planting shall be required to meet or exceed the minimum tree density required by this Chapter.
 - 2. A tree density for existing trees to be retained is calculated to determine if supplemental trees are required in order to meet the minimum tree density for the entire site.
 - 3. Where supplemental trees are required, a minimum size that may be planted to meet the required tree density is established.
 - 4. Location prioritization is established by this Chapter for both retained trees and supplemental trees.
 - 5. If a development site falls below the minimum tree density with existing trees, supplemental planting is required.
- B. Tree Density Requirement. The required minimum tree density varies by zoning designation. The minimum tree credits per acre shall be found in Table 14.40.050.1.
 - 1. The tree density may consist of existing trees, supplemental trees, or a combination of existing and supplemental trees pursuant to the standards of this section.
 - 2. Existing trees transplanted to an area on the same site shall not count toward the required density unless approved by the director based on transplant specifications provided by a qualified professional arborist that will ensure a good probability for survival.

**Table 14.40.050.1
 Required Minimum Tree Credits**

Zoning designation	Intensity	Required Minimum Tree Credits per Acre
PO	Low	50
PF R4, R4.5	Low/Moderate	40
R6 R8 R12	Moderate	35
MU Zones Commercial R20	High	20

- C. Tree Density Calculation and Requirements for Achieving Required Tree Density
 - 1. For the purpose of calculating required minimum tree density, only sensitive areas and associated buffers to be maintained by the development proposal shall be excluded from the site

area used for calculation of tree density. Excluded sensitive areas shall be limited to all wetlands, streams, and landslide hazard areas and associated sensitive areas buffers to be maintained by the development through permanent protection within a Native Growth Protection Area tract or easement.

2. Tree density calculation for existing trees:
 - a) Diameter at breast height (DBH) of the tree shall be measured in inches.
 - b) The tree credit value that corresponds with DBH values shall be found in Table 14.40.050.2. These credits shall be multiplied by one and one-half (1.5) for existing native conifers (or other conifer species as approved by the director).
 - c) Retained red alder and cottonwood trees shall not count toward the tree density requirement.
 - d) Trees located within a Native Growth Protection Area tract or easement to be established by the proposal shall not count toward the tree density requirement.

Table 14.40.050.2

Tree Density Credits for Existing Trees

DBH	Tree Credits	DBH	Tree Credits	DBH	Tree Credits
10" - <12"	1	24" - <26"	8	38" - <40"	13
12" - <14"	2	26" - <28"	9	40" - <42"	13
14" - <16"	3	28" - <30"	10	42" - <44"	13
16" - <18"	4	30" - <32"	11	44" - <46"	13
18" - <20"	5	32" - <34"	12	46" - <48"	13
20" - <22"	6	34" - <36"	13	48" - <50"	13
22" - <24"	7	36" - <38"	13	≥50"	13

Example: A 0.22-acre (9,5832sf) lot in the PO zone would need eleven tree credits (50 X 0.22 = 11). The tree density for the lot could be met by retaining one (1) existing 19-inch deciduous (not red alder or cottonwood) tree (five (5) tree credits) and one existing 16-inch native coniferous tree (4 tree credits X 1.5 = six (6) tree credits).

3. Minimum tree retention required to meet minimum density requirement: For sites with existing tree canopy, a minimum percentage of tree credits shall be from retained trees; the remainder may be from retained trees or supplemental plantings. In order to ensure that existing tree canopy is appropriately retained as new development activities occur, the following portion of required tree density credits must be achieved through retention of existing trees:
 - a) For sites within Group 1 Subbasins, seventy percent (70%) of required tree credits.
 - b) For sites within Group 2 Subbasins, fifty percent (50%) of required tree credits.
 - c) For sites within Group 3 Subbasins, thirty percent (30%) of required tree credits
4. Supplemental Trees Planted to Meet Minimum Density Requirement.

- a) To achieve remaining required minimum tree density credit not achieved through retention of existing trees, supplemental trees shall be planted.
 - b) For sites where existing (pre-development) tree density is not sufficient to meet tree retention minimums required by subsection 3 of this section, retention of all existing significant trees shall be required. Remaining required tree density credits shall be achieved through supplemental planting.
 - c) Minimum Size and Tree Density Value for Supplemental Trees. The required minimum size of a supplemental tree worth one (1) tree credit shall be six (6) feet tall for native or other conifers and two (2) inch caliper for deciduous or broad-leaf evergreen trees. Additional credits may be awarded for larger supplemental trees. The installation and maintenance shall be pursuant to DMC 14.40.070 and 14.40.090 respectively.
- D. The director may allow for impacts to significant trees beyond these retention standards only when the applicant demonstrates the following:
1. For all development within residential zones and the Mixed Use 12 (MU12) zone: achieving the required minimum tree density would reduce development opportunity such that the minimum residential densities established for each zoning designation under Title 14 would not be achieved. Minimum density is not established by DMC Chapter 14.12 for R4 and R4.5 zoning districts; however for purposes of this subsection shall be three (3) lots per usable acre. Usable site area for determination of minimum residential density shall be determined consistent with the net usable area calculation methods in DMC 14.42.090.
 2. For all development within non-residential zones (or where residential uses are only allowed on upper floors): that the proposed activity requiring additional removal of existing significant trees is the only reasonable alternative that will accomplish the applicant's objectives, and only when supplemental trees are provided to meet tree density credit requirements.
 3. For all instances where removal of existing significant trees is authorized, the city shall still require the maximum retention of existing trees as is feasible for the development site. The city may require additional on-site supplemental tree planting, off-site supplemental tree plantings, and/or a fee in lieu of additional supplemental tree planting to achieve higher tree density credit than the minimum required by 14.40.050.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.060 – New development sites—Priorities for tree retention.

- A. Tree Priority for Retention/Site Design. The site plan shall take into account significant trees and be designed in accordance with the following guidelines:
1. Achieving required tree retention shall be included as a primary step in site planning. Site design strategies and specific development site areas targeted for tree retention shall be identified within the Preliminary Tree Assessment required by DMC 14.40.040, and shall be presented at the pre-application meeting with the city. City approval of the Preliminary Tree Assessment, including overall site design that will achieve minimum requirements for tree density and significant tree retention, shall be required as part of preliminary subdivision and short subdivision review and approval or preliminary binding site plan review and approval consistent with DMC Chapter 14.66.
 2. Trees shall be incorporated as a site amenity with a strong emphasis on tree protection. Forested sites should retain their forested look, value, and function after development, to the extent possible.
 3. Trees should be protected within vegetated islands and stands rather than as individual, isolated trees scattered throughout the site. The city may refuse to consider individual, isolated trees as candidates for retention.

4. Trees to be retained must be healthy and wind-firm as identified by a qualified professional arborist. In designing a development project, the applicant shall prepare the required tree retention plan with consideration of the following retention priorities. Priorities are not provided in an order of preference; successful tree retention shall meet as many of these priorities as are feasible, based on site conditions:
 - a) Tree groves and associated vegetation that are adjacent to areas that are proposed to be set aside as native growth protection areas (sensitive areas and protected buffers), such that retained trees provide additional habitat, hydrologic, water quality, and land stability functions.
 - b) Trees that will be located within a fish and wildlife habitat corridor, as established by the development proposal consistent with DMC Chapter 14.42.
 - c) Trees that form a grove with on-site exceptional trees that must be retained on the development property or on immediately adjacent properties.
 - d) Trees that are a part of grove that extends into adjacent property, such as in a public park, open space, sensitive area buffer or otherwise preserved group of trees on adjacent private property. If significant trees must be removed in these situations, an adequate buffer of smaller trees may be required to be retained or planted on the edge of the remaining grove to help stabilize the grove.
 - e) Trees shall be retained within required common open spaces and recreational spaces, with site location and design of these spaces provided to maximize existing stands of trees.
 - f) Trees located in the site perimeter, especially when they provide a screening function between different land uses.
5. Building footprints, parking areas, roadways, utility corridors and other structures should be designed and located with consideration of tree protection opportunities.
6. The grading plan shall be developed to accommodate existing trees and avoid alteration to grades around existing trees to be retained as part of a tree retention plan.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.070 – New development sites - Priorities and standards for supplemental trees.

A. Supplemental Tree Location. In designing a development to meet the required minimum tree density, the site design and landscape plan shall provide suitable locations, soil preparation and volume and adequate area for required supplemental trees. Supplemental trees shall be planted in the following order of priority:

1. On-Site. The preferred locations for on-site supplemental trees are (in order of priority):
 - a) Adjacent to sensitive areas and associated buffers that are being designated as an NGPA tract or easement (required for wetlands, streams, and landslide hazard areas);
 - b) Within wildlife habitat corridors established by the approved site plan;
 - c) Within required common open spaces and recreation spaces as established by the approved site plan;
 - d) Adjacent to storm water facilities as approved by Public Works;
 - e) Within other site common areas within the approved site plan;
 - f) Within site perimeter areas where contiguous with offsite existing forests; and
 - g) As street trees; consistent with subsection B of this section. However only within and only when soil conditions are determined adequate to provide for long-term viability of the street tree(s).
2. Off-site tree replacement with replacement costs (material plus labor) at the applicant's expense.
 - a) Allowable sites for receiving off-site replacement plantings are city-owned properties, or private open spaces which are permanently protected and maintained, such as an NGPA, park properties, street rights-of-way, and other properties as determined appropriate by the director.
 - b) All trees to be replaced off-site shall meet the replacement standards of this chapter.
 - c) The city may deny requests for off-site tree replacement within public parks and open spaces where no master park and/or open space plan is established. As feasible and as warranted by requests for use of public off-site tree replacement areas, the city shall complete planning for specific parks and/or open spaces to establish receiving sites for appropriate tree planting.
3. A fee in lieu of tree replacement may be allowed, subject to approval by the director.
 - a) The amount of the fee shall cover the cost of a tree, installation (labor and equipment including staking, mulching), maintenance (including watering, warranty, and monitoring) for five years, and fund administration. Such costs shall be determined by the city.
 - b) The fee shall be paid to the city prior to final site plan or final plat approval, or the issuance of a tree removal permit or letter, whichever applies.

B. Supplemental Tree and Replacement Tree Planting Standards:

1. All standards of this subsection shall be required in addition to applicable landscaping standards of DMC Chapter 14.38.
2. Supplemental trees and replacement trees shall be selected as species appropriate to conditions of proposed planting. For new developments, the City shall require supplemental trees to be specified by a qualified professional arborist or landscape architect.
3. To support selection of appropriate tree species for different conditions in Duvall, the city may establish tree lists for use adjacent to native growth protection areas, within open space areas, within parks, as street trees, and as yard trees.

4. All supplemental trees planted as street trees shall be planted in landscape strips a minimum of eight (8) feet wide wherever the supplemental street trees are proposed.
5. For all supplemental and replacement trees, soil and planting conditions shall be determined adequate to provide for long-term viability of the street tree(s). At minimum, the following planting standards shall apply:
 - a) Soils within a minimum three foot (3') radius area surrounding the planting location shall be loosened to a minimum depth of twenty-four inches (24");
 - b) Wherever mass grading has occurred, stockpiled or imported topsoils from an approved source shall be tilled into existing soils to prevent a distinct soil interface from forming. The organic content of soils in any tree planting area shall be as necessary to provide adequate nutrient and moisture-retention levels for the establishment of the tree; and
 - c) Tree planting pits shall not be less than three (3) times the root ball diameter of the supplemental or replacement tree.

(Ord. XXXX)

14.40.075 – Required yard trees for new residential lots.

- A. All new residential developments shall be required to include yard trees within proposed residential lot landscaping plans. Trees shall be retained or planted as follows:
 1. All newly created lots zoned R4 or R4.5 shall be required to provide a minimum of three (3) yard tree points;
 2. All newly created lots zoned R6 or R8 shall be required to provide a minimum of two (2) yard tree points;
 3. All newly created lots zoned R12 or R20 or within MU zones shall be required to provide a minimum of one (1) yard tree points.
- B. Yard tree points are assigned as assigned by Table 14.40.075.1

Table 14.40.075.1

Tree Density Points for Remaining Trees and Supplemental Yard Trees on New Residential Lots

DBH	Yard Tree Points
Supplemental yard tree	1
6" - <10"	1
10" - <16"	2
16" +	3

- C. In addition to applicable landscaping requirements of DMC Chapter 14.38, supplemental yard trees shall meet tree planting standards provided in 14.40.070.B.
- D. For new residential developments that provide street trees as supplemental trees consistent with 14.40.070, the residential yard tree requirement may be reduced by one (1) tree point for every lot that is fronted by a new supplemental street tree.

14.40.080 – Tree protection—Construction of new developments.

- A. To ensure long-term viability of trees and tree stands identified for protection permit plans and construction activities shall comply with the following tree retention requirements:
1. All minimum required tree protection measures shall be shown on the tree retention plan and the site grading plan. Project site plans shall include a summary of the project-specific tree protection measures.
 2. Tree protection barriers shall be installed along the outer edge and completely surround the critical root zone of trees to be protected prior to any land disturbance and shall remain until the director authorizes tree protection barrier removal.
 3. Tree protection barriers shall be a minimum of six (6) feet high, constructed of chain link or similar material, subject to approval by the Director. "Tree Protection Area" signs shall be posted visibly on all sides of the fenced areas facing toward areas of site grading and construction. On large project sites, the director may also require that signs requesting subcontractor cooperation and compliance with tree protection standards be posted at site entrances.
 4. Where tree protection areas are remote from areas of land disturbance, and where approved by the director, alternative forms of tree protection may be used in lieu of tree protection barriers, provided that protected trees are completely surrounded with continuous flagging and are accompanied by "Tree Protection Area" signs.
 5. Native understory trees, shrubs and other vegetation shall be protected within the designated tree protection area.
 6. Construction planning and activities within the critical root zone of retained significant trees:
 - a) To ensure that structures, utilities, and roadways are located an adequate distance from a protected tree and to allow adequate room for construction activities, the limits of construction clearing and grading shall generally be located no closer than the critical root zone of all protected trees. Work within that area shall be reviewed and approved by a qualified professional arborist and the planning director. The city may require third party review by a qualified professional arborist representing the city.
 - b) Except for structures proposed as a raised deck, bay window, or cantilevered or otherwise raised above the ground's surface so as not to disrupt the tree's roots, no structures shall be allowed within the interior critical root zone (ICRZ).
 - c) Sidewalks and utilities may be located within the critical root zone of a protected tree, provided that construction methods and materials used will result in minimal disruption of the tree's roots, and that additional measures for tree protection are proposed and approved which will ensure the long-term viability of the tree.
 - d) Grade within critical root zone: the grade shall not be elevated or reduced within the critical root zone of trees to be preserved without the director's authorization based on recommendations from a professional arborist.
 - e) In limited instances based on site constraints, the director may allow construction limits or an alteration of grades within the critical root zone, provided that the applicant submits an evaluation by an arborist which demonstrates that the proposed construction will not reduce the long-term viability of the tree.
 - f) All construction activities, including, but not limited to, staging any materials, operating or parking equipment, or dumping concrete washout or other chemicals, shall be prohibited within the critical root zone of protected trees. During construction, no person shall attach any object to any tree designated for protection.
 7. In addition to the subsection 6 of this section, the director may require the following:

- a) An evaluation by an arborist to determine if protective measures should be required beyond the critical root zone.
 - b) If equipment is authorized to operate within a tree protection area, the soil and critical root zone of a tree must be covered with mulch to a depth of at least six (6) inches or with plywood, steel plates or similar material in order to protect roots and soil from potential damage caused by heavy equipment.
 - c) To minimize root damage wherever development is proposed and allowed within the critical root zone, a two (2) foot-deep trench shall be hand-excavated at edge of the allowed construction limit, to cleanly sever the roots of trees to be retained. Never rip or shred roots with heavy equipment.
8. Preventative Measures. In addition to the above minimum tree protection measures, the applicant shall support tree protection efforts by employing, as appropriate, the following preventative measures, consistent with best management practices for maintaining the health of the trees:
- a) Pruning of visible deadwood on trees to be protected or transplanted;
 - b) Application of fertilizer to enhance the vigor of stressed trees;
 - c) Use of soil amendments and soil aeration in tree protection and planting areas;
 - d) Mulching over tree critical root zone areas; and
 - e) Ensuring proper water availability during and immediately after construction.
- C. Prior to final plat or final site plan approval, an arborist hired by the applicant shall be required to inspect all trees remaining on a site and provide a written report as to the status of such trees. Any protected tree found to be irreparably damaged, severely stressed or dying shall be replaced at a three tree to one tree ratio. The enforcement standards of DMC Section 14.40.100 may also apply at the director's discretion. The director will take into account the reasons for the damaged trees in determining if the fine set out in DMC Section 14.40.100 applies.
- D. Alternative Methods. The director may approve the use of alternative tree protection techniques if a protected tree will be protected to an equal or greater degree than through the techniques listed above.
- E. Designation of Protected Trees:
1. The tree plan and any application and permit plans that cover such areas shall show all trees designated for protection/retention. These areas may be shown by labeling them as "protected trees" or "native growth protection areas" or such other designation as may be approved by the director. Protected vegetation, including protected trees, shall not be modified, harmed or removed except as provided in this chapter.
 2. The director may require that protected trees be permanently preserved within a tract, easement or other permanent protective mechanism. When required, the location, purpose, and limitation of these protected areas shall be shown on the face of the deed, plat, site plan, or similar document and shall be recorded with the King County Department of Records and Elections. The recorded document shall include the requirement that the protected areas shall not be removed, amended or modified without the written approval of the city of Duvall.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.090 – Maintenance.

- A. Any existing retained tree or supplemental tree shown on an approved tree retention plan, and any other tree required by the City to be planted, shall be maintained in healthy condition by the property owner or homeowners association for a period of five (5) years following issuance of the certificate of occupancy for the individual lot or development. After five (5) years, all trees on the property are subject to DMC 14.40.030.

1. Trees shall be monitored and maintained for a period of five (5) years to ensure that retained trees were not compromised by adjacent development and that supplemental, replacement, and transplanted trees are surviving. The director may extend the monitoring and maintenance period beyond five (5) years if determined necessary to ensure successful establishment of supplemental and replacement trees.
 2. During years 1, 3, and 5 of the monitoring period, trees shall be monitored by a qualified arborist and reports submitted to the City that verify the health of all trees on the approved tree retention plan.
 3. Any tree found to be dead or dying shall be replaced by tree(s) that, at minimum, replace the tree's density credit.
 4. Any tree found to be unhealthy shall be assessed for opportunity for preventative measures to improve tree health, and shall be identified for additional review in future years of the monitoring period. Reasonable preventative measures to improve tree health, as recommended by a qualified professional arborist, shall be implemented as annual maintenance. For trees found to be unhealthy in year 5 of the monitoring period, the director may require additional supplemental planting based on review of monitoring information submitted by the property owner / home owner's association.
- B. Maintenance Bond for New Development Sites. A maintenance bond, cash deposit, or other security in a form acceptable to the City attorney covering ten (10) percent of the cost of the performance assurance bond amount established for all site landscaping per DMC Chapter 14.38, shall be in place prior to the release of a performance bond and shall be required to be held by the City for five years following issuance of building occupancy permit for the development site.
1. The director is authorized to notify the owner of any property upon which trees were retained or supplemental trees were planted as a condition of approval under this chapter that trees are not being adequately maintained, and the specific nature of such failure to maintain. The notice shall specify a date by which the property owner shall be expected to comply.
 2. Upon the failure to perform the required maintenance within the date specified by the notice, the director is authorized to collect funds under the maintenance bond or other security, and cause the required maintenance to be completed.
 3. When funds have not been set aside or the performance assurance has expired, the director is authorized to request the city attorney to institute legal action to recover the cost of the required maintenance, and upon receipt of the funds to cause the maintenance to be done.
 4. Maintenance as used in this section includes replacement of dead, diseased or damaged trees, preventative measures to improve health of unhealthy trees, and repair of irrigation systems.
 5. In subdivisions or site plans where the right-of-way contains retained or supplemental trees, the adjacent property owner, homeowner's association or like mechanism, is required to maintain that landscaping. Such requirement shall be noted on the face of the plat or site plan. If there are such requirements that are maintained by an organization other than the adjacent homeowner, or if there are common areas on a property, a homeowner's association is required.
- C. Cutting and Pruning.
1. Protected trees shall not be topped; any tree topping shall result in requirements for replacement tree(s) and fines, as determined consistent with 14.40.100 and review of the tree topping activity by the director.
 2. Street trees, on all public streets, shall be cut or pruned only under the supervision of, or with the approval of, the city of Duvall public works department.
 3. Pruning and maintenance of protected trees shall be consistent with best management practices in the field of arboriculture and further the long-term health of the tree.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.100 – Enforcement.

- A. Enforcement for retained trees and supplemental trees on new development sites:
1. Trees that are shown on a plan as to be retained as part of the minimum tree density requirement shall not be damaged and/or removed during, or as a result of, construction. If such trees are damaged and/or removed, the applicant shall be responsible for paying a fine of one thousand dollars (\$1,000.00) per tree plus installing supplemental trees and/or paying an in-lieu fee as set out in DMC Section 14.40.070 at a three trees to one tree ratio.
 2. Trees that are shown on a plan as to be retained as part of the minimum tree density requirement shall be retained, unless such trees become hazardous, or as set out in DMC Section 14.40.030. If such trees are removed without a permit and/or approval of the city, the property owner shall be responsible for paying a fine of one thousand dollars (\$1,000.00) per tree plus installing supplemental trees and/or paying an in-lieu fee as set out in DMC Section 14.40.070 for the equivalent diameter of the tree(s) removed.
 3. Significant trees that are saved in excess of those required to meet the minimum tree density shall not be subject to subsections A.1 or A.2 of this section; however, shall be protected consistent with subsection B of this section.
- B. Enforcement for existing developed lots and existing developed public right-of-ways:
1. The City shall encourage compliance with requirements for tree removal from existing developed lots and existing public right-of-ways through education and outreach, and by providing clear direction and standard forms for tree removal notifications.
 2. Upon determination that there has been a violation of this chapter resulting in tree removal not associated with development activity, the property owner may be responsible for paying a fine of up to one thousand dollars (\$1,000.00) per tree, plus installing replacement supplemental trees and/or paying an in-lieu fee as set out in DMC Section 14.40.070 for the equivalent diameter of the tree(s) removed.
 3. The City may pursue code enforcement and penalties consistent with Chapter 14.04 DMC.
- C. To ensure effective management of significant trees and the urban forest across Duvall, the city shall periodically assess tree canopy across the city using aerial imagery and remote sensing. If reductions in tree canopy cover over time are identified, the city shall evaluate the assessment to identify areas of the city where tree canopy has decreased, development activities associated with tree canopy loss, and/or other patterns of tree canopy change. Based on assessment and evaluation, the city shall consider necessary updates to tree protection standards and other city programs that implement 2015 Comprehensive Plan goals ES 22 and ES 25.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.110 – Exemptions.

The following shall not be subject to the provisions of this chapter:

- A. Hazard, dead, or dying trees can be removed after a letter of request documenting the situation is submitted to the city by a property owner. In the event that a tree is not obviously dead, dying or a hazard, a letter from an arborist describing the condition of the tree shall be submitted with the letter of request. Hazard, dead, or dying trees do not count toward the annual removal allowance set out in DMC Section 14.40.030(A). Tree replacement for such trees shall be at a one tree to one tree ratio.
- B. Emergency Tree Removal. Any tree on private property that poses an imminent threat to life or property may be removed without first obtaining a permit/city approval. The property owner shall contact the city within seven days of removal to provide evidence of threat for approval of exemption. The city

retains the right to dispute the emergency and require that the party obtain a permit and/or require that replacement trees/vegetation be replanted as mitigation.

- C. Utility Management. Removal of private trees by the city and/or utility provider in situations involving immediate danger to life or property, or interruption of services provided by a utility.
- D. Commercial Nurseries or Tree Farms. Removal of trees that are being grown to be sold as Christmas or landscape trees.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.120 – Tree protection technical terms and definitions.

“Critical Root Zone (CRZ)” means the circular area surrounding a tree, centered at the base of the trunk, with a radius equal to one foot for every one inch of trunk diameter (DBH) (example: a tree with a ten-inch DBH has a critical root zone with a ten-foot radius).

“Crown” means that portion of the tree’s stem that is occupied by branches with live foliage.

“Diameter at Breast Height (DBH)” means the diameter of a tree measured 4.5 feet above the ground line on the high side of the tree.

“Exceptional Tree” means any viable tree, which because of its unique combination of size and species, age, location, and health, is worthy of long-term retention, as determined by the City’s qualified arborist. To be considered exceptional, a tree must meet the following criteria:

1. The tree must have a diameter at breast height (DBH) that is equal to or greater than the threshold diameters listed in Table 14.40.120.1. For other tree species not listed in Table 14.40.120.1, individual trees may be identified by the director and the City’s qualified arborist as warranting designation as an exceptional tree because of its unique combination of size and species;
2. The tree shall exhibit healthful vigor for its age and species;
3. The tree shall not be considered a significant risk in regard to existing utilities and structures as evaluated per the tree risk assessment defined in DMC 14.40.030(B);
4. The tree shall have no visual structural defects that cannot be mitigated by one or more measures outlined in the International Society of Arboriculture Best Management Practices; and
5. If retained under current tree growth conditions, the tree can be expected to remain viable with reasonable and prudent management and care.

**Table 14.40.120.1
 Exceptional Tree Species and Their Threshold Diameters**

Species	Threshold Diameter (DBH)
Bigleaf MAPLE – <i>Acer macrophyllum</i>	30 inches
Douglas FIR – <i>Pseudotsuga menziesii</i>	30 inches
Grand FIR – <i>Abies grandis</i>	24 inches
Sitka spruce – <i>Picea sitchensis</i>	30 inches
Western HEMLOCK – <i>Tsuga heterophylla</i>	24 inches
Western Red CEDAR – <i>Thuja plicata</i>	30 inches

Shore PINE - <i>Pinus contorta 'contorta'</i>	12 inches
Pacific DOGWOOD – <i>Cornus nuttallii</i>	6 inches
Pacific CRABAPPLE – <i>Mauls fusca</i>	12 inches
Black HAWTHORN - <i>Crataegus douglasii</i>	6 inches
Orchard (Common) APPLE – <i>Malus sp.</i>	20 inches
Giant SEQUOIA – <i>Sequoiadendron giganteum</i>	30 inches
Kousa DOGWOOD – <i>Cornus kousa</i>	12 inches
Pacific YEW – <i>Taxus brevifolia</i>	6 inches
European white BIRCH – <i>Betula pendula</i>	24 inches
Incense CEDAR – <i>Calocedrus decurrens</i>	30 inches
Flowering CHERRY – <i>Prunus sp. (serrula, serrulata, sargentii, subhirtella, yedoensis)</i>	24 inches
Eastern black WALNUT – <i>Juglans nigra</i>	30 inches
American ELM - <i>Ulmus americana</i>	30 inches
English ELM – <i>Ulmus procera</i>	
GINGKO – <i>Ginkgo biloba</i>	24 inches

“Grove” means a group of three (3) or more significant trees with overlapping or touching crowns.

“Hazard Tree” means a tree that has a disease and/or defect which makes it have a high probability of failure. This can include root rot, a significantly decayed trunk, two stems pressing on each other, previous failure of a crown, or other defect as identified by an arborist.

“Inner Critical Root Zone (Inner CRZ)” or “Interior CRZ” means an area encircling the base of a tree equal to one-half the diameter of the critical root zone. Disturbance of this area beneath a tree would cause significant impact to the tree, potentially life threatening, and would require maximum post-care treatment to retain the tree.

“Limits of disturbance” means the boundary between the area of minimum protection around a tree and the allowable site disturbance as determined by the requirements of this Chapter.

“Multi-stemmed tree” means a tree that has one stem at ground level but that splits into two or more stems above ground level. Trees whose stems diverge below ground level are considered separate trees. Where a tree splits into several trunks below typical DBH, the DBH for the tree is the square root of the sum of the DBH for each individual stem squared (example with three stems: DBH = square root of [(stem 1)² + (stem 2)² + (stem 3)²]).

“Nuisance Tree” means a tree that meets either of the following criteria:

1. Is causing obvious physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, or roof; or

2. Has sustained damage from past maintenance practices. The problems associated with the tree must be such that they cannot be corrected by reasonable practices including but not limited to: pruning of the crown or toots of the tree, bracing, and or cabling to reconstruct a healthy crown.

“Qualified Professional Arborist” means an individual who is a certified professional with academic and field experience that makes them a recognized expert in urban forestry and tree protection during development. A qualified arborist shall be a member of the International Society of Arboriculture (ISA) and/or the Association of Consulting Arborists and shall have specific experience with urban tree management in the state of Washington. Additionally, a qualified professional arborist identified to represent the City shall be a certified arborist or board certified master arborist, as certified by the International Society of Arboriculture, and be ISA Tree Risk Assessment Qualified and have the necessary training and experience to use and apply the appraisal methodology prescribed in the current edition of the ISA Plant Appraisal Guide.

"Significant Tree" means any tree other than red alder and cottonwood trees that measures a minimum of ten (10) inches diameter at breast height (DBH).

“Street tree” means a tree located within a public right-of-way.

“Tree risk assessment” means the systematic process to identify, analyze, and evaluate tree risk. Tree risk assessment shall be conducted in accordance with the latest version of the ISA Best Management Practices Guide.

“Viable (tree)” means a significant tree that a qualified arborist has determined to be in good health with a low risk of failure, is relatively windfirm if isolated or exposed, is a species that is suitable for its location, and is therefore worthy of long-term retention.

“Windfirm” means a tree that is healthy and well-rooted, with qualified professional arborist evaluation and determination that it can withstand normal winter storms in Duvall.

“Yard tree” means any tree located within a residential lot.