Sensitive Areas and Tree Protection Update Project
Advisory Group Agenda

Meeting #9 – Tree Protection Update *(Final of Three Meetings)*
Monday, January 8, 2018 – 5 – 6:30

MEETING AGENDA
This will be our final meeting, reviewing updates to Tree Protection standards and providing final input for City and Consultant Team consideration in drafting the Advisory Committee Recommended Tree Protection Code Updates. Following this meeting, the 'AC Recommended Tree Protection Code Updates' draft will be prepared and distributed for final review, input, and agreement from AC members.

Following the meeting, the City will be hosting a Public Open House presenting the Tree Protection Update Project, and highlighting changes being considered. We invite all AC members to stay for the Open House.

5:00 – 5:10	**Introduction** Agenda preview	No action
5:10 – 5:25	**Recap of Input on Draft #1, including SurveyMonkey response** Tree protection on existing developed sites (requests for removal not associated with new development) Proposed definitions for Significant Trees and Exceptional Trees – concerns and input	Review Meeting #8 Notes and Survey Monkey Results ahead of meeting
5:25 – 5:50	**Updated Definition and Management Approach for "Exceptional Trees"** Thresholds DBH sizes reduced, species list expanded Criteria for impact allowances (applicable for any request to remove an exceptional tree)	Review draft #2 redline code Discussion
5:50 – 6:15	**Updated Definition and Management Approach for "Significant Trees"** Not associated with new development Associated with new development Implications of minimum tree density requirements	Review draft #2 redline code Discussion
6:15 – 6:25	**Priorities for Tree Retention and Supplemental Trees, New Standards for Yard Trees**	Review of code and packet ahead of meeting Discussion
6:25 – 6:30	**Next Steps** Open House – Tonight Planning Commission / City Council Workshop – Jan 10th Draft #3 – Advisory Committee Recommended Local Review, Hearing, and Consideration for Adoption	No action

Please call Lara Thomas (425-789-9658) if you have any questions on the project.

City of Duvall Chapter 14.40 - TREE PROTECTION

Proposed Updates, Second Draft – January 5, 2018

Provided for Advisory Committee Review – New Updates Highlighted Blue

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 ~~tree replacement~~ supplemental tree planting to achieve a goal of protecting significant trees and increasing tree canopy cover ~~no net reduction in the number of significant trees~~ 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 ~~on developed lots, that is, a lot that is part of a subdivision or site plan approval or a lot that was built out under previous regulations.~~ existing improved public right-of-ways.

~~B~~C. DMC Sections 14.40.040 through 14.40.~~110~~ 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.

~~C~~D. DMC Sections 14.40.100 through 14.40.120 apply to tree protection on developed lots, developed public right-of-ways, and applications fro new developments.

~~C~~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 ~~sixteen~~ six ten (1~~0~~6) inches in diameter at breast height (DBH) ~~(four and one-half feet above the ground).~~ [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.

~~E.~~D. ~~A root protection zonecritical root zone is 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).is measured five feet outside of the dripline of a tree.~~ [ADDED TO NEW TECHNICAL TERMS DEFINIITION SECTION]

-(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 - ~~Developed lots—Residential or commercial.~~ Tree Removal – Not Associated with Development Activity

The following regulations shall apply to ~~developed lots~~ 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 notification form to be used by property owners for compliance with tree removal standards of this section (14.40.030). The tree removal notification 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.

2. Property owners shall submit a tree removal notification form for any requests for significant tree removal, consistent with the allowances of this section (14.40.030).

3. For proposed tree removal that include 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 – any such request may only be granted if also consistent with the limited allowances within 14.40.025.

   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.

~~A.~~B. Existing residential lots – significant tree removal. Any residential property owner may remove ~~up to two~~ significant trees from a lot ~~each year without a permit~~after providing the city with a tree removal notification, 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 ~~shown on an approved tree plan as to be retained~~subject to the retention and maintenance requirements in place for five (5) years following approval of new development (section 14.40.090);

3. The property owner shall plant a minimum of one (1) replacement tree for each significant tree removed;

4. The property maintains minimum tree density credit as required by lot size and/or applicable residential zoning designation, based on the DBH of other remaining trees on the property and replacement trees provided:

   a) Any existing residential lot over 10,000 square feet an area shall be required to maintain a minimum of three (3) tree density credits for every 10,000 square feet of lot area. The required minimum credit shall be rounded to the nearest whole number.

b) All other lots zoned R4 or R4.5 shall be required to maintain a minimum of three (3) tree density credits;

c) All other lots zoned R6 or R8 shall be required to maintain a minimum of two (2) tree density credits;

d) All lots zoned R8, R12, or R20 or within MU zones shall be required to maintain a minimum of one (1) tree density credits.

5. For existing residential lots, tree density credit is assigned as assigned by Table 14.40.030.1

Table 14.40.030.1 [NEW TABLE]

Tree Density Credits for Remaining Trees and Replacement Trees on Existing Residential Lots

DBH	Tree Credits
Replacement / Supplemental Tree	1
6” - <10”	0.5
10” - <13”	1
13” - <16”	2
16” +	3

Example: A residential lot owner (7,000 square foot lot) within an R4.5 zone proposing to remove a 15” DBH tree would be required to:

- *Provide at minimum one replacement tree, and*
- *Assess remaining trees on their property to see if the replacement tree (1 credit) + remaining trees (XX credits) = a total of 3 credits. If only one existing tree at 11” DBH would remain after the proposed removal, the property owner would have to plant an additional replacement tree (2 credits for 2 replacement trees + 1 credit for 11” DBH remaining tree = 3 credits)*

~~The tree is not the last one or two trees on the lot. A property owner is required to submit a letter of request prior to removal in this case.~~

~~B.~~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;

2. The tree(s) is determined to be a nuisance, hazard, dead, or dying, consistent with subsection D of this section.

3. Removal is documented as unavoidable and necessary for repair and/or improvements to public facilities, including roadways, sidewalks, utilities, and stormwater infrastructure. In all such instances, tree removal notification shall be submitted to the planning director for concurrence.

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.

~~C.~~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.

~~D.~~E. Significant trees which are a nuisance, ~~H~~hazard, dead, or dying, may be removed after a ~~letter of request~~Tree Removal Notification 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 ~~letter from an~~tree risk assessment prepared by a qualified professional arborist describing ~~the~~ how the tree(s) meet the definition of a hazard tree ~~condition of the tree~~ shall be submitted with the ~~letter of request.~~Tre Removal Notification. Nuisance trees must be documented as such in the Tree Removal Notification consistent with the nuisance tree definition in ~~DMC 14.06~~14.40.120 of this Chapter. Nuisance, h~~H~~azard, 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 (1) tree to one (1) tree ratio

~~1. A hazard tree is one 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 , previous failure in the crown, or other defect as identified by a certified arborist.~~

~~D~~F. Any tree on private property that poses an imminent threat to life or property may be removed without first ~~obtaining a permit/city~~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.

~~D~~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. The woody debris from the trees may be required to be retained in the NGPA or sensitive area after ~~removal~~ 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 ~~one~~ 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~~a two-inch caliper deciduous or eight-foot tall evergreen tree~~.

~~E. A property owner and/or homeowner's association requesting to remove a tree(s) shown on an approved tree plan as to be retained or the last one or two trees on the lot shall be required to replace such trees at a two trees to one tree ratio.~~

~~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. The installation and maintenance shall be pursuant to DMC 14.40.070 and 14.40.090 respectively.

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

~~HG. Removal of viable exceptional trees, as defined by this chapter and determined by the city's qualified arborist, is prohibited.~~ [MOVED TO NEW SECTION PROVIDED – SEE 14.40.025]

(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.

A. 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:

   e) Engineered professional survey location point for every tree over ~~six~~ten inch (~~6~~10") dbh on the site.

   f) Size (dbh), species, location, and assessment of all ~~significant~~ trees proposed for retention to meet tree density requirements of 14.40.050. Significant t~~T~~rees that are on adjacent properties that have a ~~dripline~~ 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;

e)g) 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.

f)h) 4. Location of sSensitive areas, including buffer and type. NoExcept 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.

B2. The Tree Retention Pplan shall be submitted with a professional evaluation and/or a tree protection plan prepared by a qualified professional arborist [. Such professional evaluation and/or tree protection plan should and shall include the following:

a) 1. Complete Site map with Tree ID number, species, diameter at 4.5' above grade for all tree proposed for retention, including any identified exceptional trees, and a Tree Assessment Matrix with the description of each tree's health and viability. If a tree is notEvaluation should include identification of significant trees that are not viable for retention, the reason(s) must be soundly 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. and for which no reasonable alternative action is possible (pruning, cabling, etc.). Impact of necessary tree removal to remaining trees, including those in a grove or on adjacent properties, must also be discussed.

b) 2. 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 planning director, and must be consistent with all requirements of DMC 14.40.080.

c) 3. 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) 4. Suggested location and species of supplemental trees to be used for replacement 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 project and city arboristthe 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

~~i.~~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 ~~in~~ 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—~~Percentage of trees required to be retained.~~ Tree density requirements

[NOTE: THIS SECTION IS A COMPLETE REPLACEMENT OF CURRENT CODE – NO REDLINE CHANGES INCLUDED, HOWEVER ALL PROVISIONS ARE NEW]

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 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.
3. Tree density credit requirements shall be based on the full site area, excluding wetlands, streams, and/or landslide hazard areas and associated Sensitive Areas buffers.

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

1. Tree Density Calculation. For the purpose of calculating required minimum tree density, public right-of-way, areas to be dedicated as public right-of-way, and vehicular access easements not included as lot area within an improved plat shall be excluded from the area used for calculation of tree density. Sensitive areas and associated buffers to be maintained by the development proposal shall be excluded from the area used for calculation of tree density.

   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 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 ~~as 0.5 credits~~ toward the tree density requirement ~~for the site, except where occurring as a hazard or nuisance tree~~.

   d) Trees located in Sensitive Areas and those protected within the 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
~~6~~10" - <12"	1	24" - <26"	8	38" - <40"	15
12" - <14"	2	26" - <28"	9	40" - <42"	16
14" - <16"	3	28" - <30"	10	42" - <44"	17
16" - <18"	4	30" - <32"	11	44" - <46"	18
18" - <20"	5	32" - <34"	12	46" - <48"	19
20" - <22"	6	34" - <36"	13	48" - <50"	20
22" - <24"	7	36" - <38"	14	≥50"	21

Example: A 0.22-acre 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).

2. Supplemental Trees Planted to Meet Minimum Density Requirement.

   a) 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, 70% of required tree credits.

      b. For sites within Group 2 Subbasins, 50% of required tree credits.

      c. For sites within Group 3 Subbasins, 30% of required tree credits

   b) For sites where existing (pre-development) tree density is not sufficient to meet tree density minimums, retention of all existing significant trees shall be required, and additional tree density credits shall be achieved through supplemental planting.

   c) The director may allow for impacts to significant trees beyond these retention standards only when the applicant demonstrates 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. In such instances, the city may require additional on-site supplemental tree planting 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.

3. 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 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.

[OLD STANDARDS OF THIS SECTION DELETED] ~~A. A minimum of thirty-five (35) percent of all significant trees on a site shall be retained. All significant trees on a site shall be counted towards the total number of significant trees, except if a tree is a hazard, dead, or dying, such tree shall not be counted. Calculations resulting in fractions shall be rounded up.~~

~~B. Of the thirty-five (35) percent of trees required for retention, a minimum of three-fourths of those trees can be located in sensitive areas or buffers. If there are significant trees suitable for retention outside of sensitive areas and buffers, one-fourth of the trees to be saved shall be outside of sensitive areas and buffers. If all significant trees are in a sensitive area or buffer, all of those trees shall be retained.~~

~~1. The director may grant reductions or adjustments to other site development standards if more than thirty-five (35) percent of the healthy significant trees are saved outside of sensitive areas. In a case-by-case review, the director shall determine the balance between tree protection that exceeds the established minimum percentage and variations to site development requirements. Adjustments that may be considered are:~~

~~a. Reductions or variations of the area or width of required open space and/or landscaping;~~

~~b. Variations in parking lot design and/or and access requirements;~~

~~c. Variations in building setback requirements;~~

~~d. Reduction in the width of certain easements;~~

~~e. Variations of grading and stormwater requirements;~~

~~f. Other variations which are proposed and determined to be appropriate and acceptable by the director.~~

~~C. There shall be no net reduction of the total number of viable significant trees on a site. The total number of viable significant trees located on a site is the number of trees subject to the no significant tree reduction policy. See example subsection (C)(1) of this section to determine what trees are counted toward the no significant tree reduction policy.~~

~~1. Example: Number of trees to be retained/number of trees counted towards no significant tree reduction policy.~~
~~82 significant trees on a site, including trees in sensitive areas and buffers, and in potential right-of-way or easements.~~
~~Arborist report shows 5 dead trees and 3 hazard trees.~~
~~82 trees - 8 trees = 74 Significant Trees. 74 trees X 35% = 25.9 trees, or 26 trees to be retained.~~

~~74 trees are required to be counted in determining how many trees are provided under the no significant tree reduction policy.~~		
~~**Summary:**~~	~~**After construction**~~	~~**26 significant trees retained, + 48 additional trees on the site = 74 total trees**~~

2. ~~All trees proposed for or existing on the project site shall be counted towards the no significant tree loss reduction policy number.~~
3. ~~Development sites with an average tree density of more than twenty (20) trees per acre after development shall be reviewed by the director to determine if the no significant tree loss number should be reduced due to the high density of trees. The director has the ability to reduce the total number of trees on a lot in such cases; however, in no case shall such number be less than the sum of the thirty five (35) percent of significant trees, the remaining trees in sensitive areas and trees required in accordance with DMC Chapter 14.38, Landscaping Standards.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.060 - New development sites—Priorities for tree retention.

[NOTE: THIS SECTION IS A COMPLETE REPLACEMENT OF CURRENT CODE – NO REDLINE CHANGES INCLUDED, HOWEVER ALL PROVISIONS ARE NEW]

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. The incorporation of trees 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.
2. 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.
3. Trees to be retained must be healthy and wind-firm as identified by ~~an~~ 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;

   e. Trees that ~~are contiguous~~form a grove with on-site exceptional trees that must be retained on the development property or on immediately adjacent properties.

c. 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;

d. Trees located in the site perimeter, especially when they provide a screening function between different land uses;

4. Building footprints, parking areas, roadways, utility corridors and other structures should be designed and located with consideration of tree protection opportunities.

5. The grading plan should be developed to accommodate existing trees and avoid alteration to grades around existing trees to be retained as part of a tree retention plan.

6. Required open space and recreational space is located and designed to protect existing stands of trees.

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. The incorporation of trees 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.~~

~~2. 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.~~

~~3. Trees to be preserved must be healthy and wind-firm as identified by an arborist. In designing a development project, the applicant shall prepare the required tree plan with consideration of the following retention priorities:~~

~~a. Tree groves and associated vegetation that are in an area that can be set aside in a NGPA;~~

~~b. Trees having a significant land stability function in geologically hazardous areas;~~

~~c. Trees located in the site perimeter, especially when they provide a screening function;~~

~~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. Specimen trees (a mature tree in exceptional health and form for its species);~~

~~f. Other viable trees.~~

~~4. Building footprints, parking areas, roadways, utility corridors and other structures should be designed and located with a consideration of tree protection opportunities.~~

~~5. The grading plan should be developed to accommodate existing trees and avoids alteration to grades around existing significant trees to be retained.~~

~~6. Required open space and recreational space is designed and located to protect existing stands of trees.~~

~~7. The site design and landscape plans provide suitable locations and adequate area for replacement trees as required in DMC Section 14.40.070.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.070 ~~–~~ Priorities for Location of Supplemental Trees~~Tree replacement—New developments and developed lots.~~

[NOTE: THIS SECTION IS A COMPLETE REPLACEMENT OF CURRENT CODE – NO REDLINE CHANGES INCLUDED, HOWEVER ALL PROVISIONS ARE NEW]

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 new 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, stream, and landslide hazard areas).
   b. Within required common open spaces and recreation spaces as established by the approved site plan;
   c. Adjacent to storm water facilities as approved by Public Works;
   d. Within other site common areas within the approved site plan;
   e. Within site perimeter areas where contiguous with offsite existing forests~~.~~; and
   f. As street trees; however only within planting strips more than eight (8) feet wide and only when soil conditions are determined adequate to provide for longterm viability of the street tree(s).~~; and~~
   g. ~~On individual residential and/or commercial building lots, where appropriate species are used and conditions are determined adequate to provide for long term viability of the proposed supplemental 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 space which is 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.
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 ~~two~~ 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. [NOTE FOR CONSIDERATION FROM UFS: This amount needs to be high enough per tree to encourage retention of existing trees as well as cover the complete cost of planting viable trees if that is necessary.]

[DELETED EXISTING CODE]~~A. New Development Sites. Applicants that do not propose to retain thirty-five (35) percent of significant trees shall replace any portion of the required thirty-five (35) percent of significant trees at a three trees to one tree ratio.~~

~~B. All Sites. Replacement trees shall be planted on the site from which significant trees are removed unless the director agrees to off-site replacement or a fee in lieu of replacement.~~

~~C. When on-site replacement cannot be achieved, the director may consider the following alternatives:~~

~~1. 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 space which is 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.~~

~~2. 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), maintenance for two 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.~~

~~3. Where appropriate, the director may consider other measures designed to mitigate the loss of trees by restoring all or parts of the forest landscape and its associated benefits. Measures may include, but are not limited to:~~

~~a. Creation of wildlife snags from trees which would otherwise be removed;~~

~~b. Replacement of certain ornamental trees with native shrubs and groundcover;~~

~~c. Replacement of dying or hazardous trees with new trees more likely to survive;~~

~~d. Daylighting and restoration of stream corridors with native vegetation;~~

~~e. Protection of non-significant trees to provide for the successional stages of forest development.~~

~~D. Tree Replacement Guidelines and Requirements.~~

~~1. When individual significant trees or significant tree stands are protected, replacement trees should be planted to enhance such trees or tree stands.~~

~~2. Replacement trees may be planted within an existing NGPA where the director determines that such planting enhances and complements existing vegetation and environmental functions.~~

~~3. Replacement trees shall be planted in locations appropriate to the species' growth habit and horticultural requirements.~~

~~4. Replacement trees shall be located to provide screening of the development from adjacent properties, where appropriate.~~

~~5. Replacement trees shall be planted in areas that connect or are adjacent to native growth protection areas or other open spaces, where appropriate.~~

~~6. Replacement trees shall be integrated into the required landscape plans for a development.~~

~~7. Replacement trees should not be planted next to or under power lines.~~

~~E. Size, Species and Condition of Replacement Trees.~~

~~1. Minimum sizes for replacement trees shall be two-inch caliper at breast height for deciduous trees and eight feet in height for evergreen trees.~~

~~2. The director may consider smaller-sized replacement trees if the applicant can demonstrate that smaller trees are more suited to the species, site conditions, and to the purposes of this section, and are planted in sufficient quantities to meet the intent of this section.~~

~~3. The director may require that a portion or all of the replacement trees be native species in order to restore or enhance the site to predevelopment character.~~

~~4. The condition of replacement trees shall meet or exceed current American Nursery and Landscape Association or equivalent organization's standards for nursery stock.~~

~~F. Installation.~~

~~1. Installation of required replacement trees shall be in accordance with best management practices for landscaping which ensure the tree's long-term health and survival.~~

~~2. All required tree replacement and other required mitigation shall be completed prior to issuance of final site plan or plat approval, unless approved by the director and bonded in accordance with DMC Section 14.38.160.~~ (Ord. 1056 § 1 Exh. A (part), 2007)

14.40.075 – Required Yard Trees for New Residential Developments

[NOTE: THIS SECTION IS ENTIRELY NEW FOR THE SECOND DRAFT]

A. All new residential developments shall be required to include yard trees within proposed 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) tree density credits;
2. All newly created lots zoned R6 or R8 shall be required to provide a minimum of two (2) tree density credits;
3. All newly created lots zoned R8, R12, or R20 or within MU zones shall be required to provide a minimum of one (1) tree density credits.

B. Tree density credit is assigned as assigned by Table 14.40.075.1

Table 14.40.075.1

Tree Density Credits for Remaining Trees and Supplemental Trees on New Residential Lots

DBH	Tree Credits
Supplemental Yard Tree	1
6” - <10”	0.5
10” - <13”	1
13” - <16”	2
16” +	3

C. 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 density credit 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 ~~minimum required tree protection:~~ 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 [range from other jurisdictions is 4.5 – 6' ; six feet recommended by consultant team], 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. 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) ~~53.~~To ensure that structures, utilities, and roadways are located an adequate distance from ~~the dripline of~~ a protected tree and to allow adequate room for construction activities, the limits of construction clearing and grading ~~limit line for a structure, utility, or roadway~~ shall generally be located no closer than the ~~root protection zone~~critical root zone of all ~~a~~ protected trees. Work within that area shall be reviewed and approved by ~~the project and city arborist~~a qualified professional arborist and the planning director. The city may require third party review by a qualified professional arborist representing the city.

   b) ~~4. No proposed structure, utility, or roadway shall be located in the root protection zoneof a protected tree, except where such~~Except for structures proposed as ~~is~~ 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) ~~5.~~ Sidewalks and utilities may be located within the ~~dripline~~ 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.

   ~~c)~~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) ~~6.~~ In limited instances based on site constraints, ~~T~~the director may allow construction limits or an alteration of grades within the ~~root protection zone~~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 ~~and traffic areas~~, or dumping concrete washout or other chemicals, shall be prohibited within the ~~root protection zone~~critical root zone of ~~a~~ 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) ~~The director may require a~~An evaluation by an arborist to determine if protective measures should be required beyond the ~~root protection zone~~critical root zone.

~~Tree protection barriers shall be installed along the outer edge and completely surround the root protection zone of significant trees to be protected prior to any land disturbance.~~

~~9. Tree protection barriers shall be a minimum of four feet high, constructed of chain link, or polyethylene laminar safety fencing or similar material, subject to approval by the director. "Tree protection area" signs shall be posted visibly on all sides of the fenced areas. On large or multiple-project sites, the director may also require that signs requesting subcontractor cooperation and compliance with tree protection standards be posted at site entrances.~~

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 12 inches, as recommended by USF] 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. [FLAGGED FOR DISCUSSION]

~~B~~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 ~~if it is part of the required thirty-five (35) percent requirement, or at a one tree to one tree ratio if in excess of the thirty-five (35) percent, but counted towards the overall tree number.~~. 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 ~~–~~ New Development Sites - Maintenance.

A. Any existing retained tree or ~~ll required replacement~~ supplemental tree~~trees and relocated tree~~ ~~s~~ 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 ~~throughout the life of the project~~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. ~~, unless otherwise approved by the director in a subsequent permit.~~

1. Trees shall be monitored 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.

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. 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. [ENTIRELY NEW SECTION] 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.

~~B~~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. ~~Significant t~~Trees that are shown on a plan as to be retained as part of the ~~thirty-five (35) percent~~ 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 ~~replacement~~ 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~~B~~. Trees that are shown on a plan as to be retained as part of the ~~thirty-five (35) percent~~ 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 ~~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~~C~~. Significant trees that are saved in excess of those required to meet the~~e required~~ ~~thirty-five (35) percent~~minimum tree density shall not be subject to subsections A.1 or A.2~~B~~ of this section; however shall be protected consistent with subsection B of this section. ~~unless such trees were saved in exchange for other considerations as set out in DMC Section 14.40.050(B)(1).~~

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.

(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 [ENTIRE SECTION IS NEW]

"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 be included in and have a diameter at breast height (DBH) that is equal to or greater than the threshold diameters listed in Table 14.40.020.1;
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 14.40.020.1
Exceptional Tree Species and Their Threshold Diameters

Species	Threshold Diameter (DBH)
Bigleaf MAPLE – *Acer macrophyllum*	30 inches
Douglas FIR – *Pseudotsuga menziesii*	30 inches
Sitka spruce – *Picea sitchensis*	6 inches
Vine maple – *Acer circinatum*	8 inches
Western HEMLOCK – *Tsuga heterophylla*	24 inches
Western Red CEDAR – *Thuja plicata*	30 inches
Willows (all native species) – *Salix sp.*	6 inches
Orchard (Common) APPLE – *Malus sp.*	20 inches
Giant SEQUOIA – *Sequoiadendron giganteum*	30 inches
Kousa DOGWOOD – *Cornus kousa* Eastern DOGWOOD – *Cornus florida*	12 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 $[(\text{stem } 1)^2 + (\text{stem } 2)^2 + (\text{stem } 3)^2]$).

“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.

“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 six (6) inches diameter at breast height (DBH).

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.

City of Duvall Chapter 14.40 - TREE PROTECTION

Proposed Updates, Second Draft – January 5, 2018

Provided for Advisory Committee Review – New Updates Highlighted Blue

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 fro 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.

[ADDED TO NEW TECHNICAL TERMS DEFINIITION SECTION](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 notification form to be used by property owners for compliance with tree removal standards of this section (14.40.030). The tree removal notification 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.

2. Property owners shall submit a tree removal notification form for any requests for significant tree removal, consistent with the allowances of this section (14.40.030).

3. For proposed tree removal that include 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 – any such request may only be granted if also consistent with the limited allowances within 14.40.025.

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 lots – significant tree removal. Any residential property owner may remove significant trees from a lot after providing the city with a tree removal notification, 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 property owner shall plant a minimum of one (1) replacement tree for each significant tree removed;

4. The property maintains minimum tree density credit as required by lot size and/or applicable residential zoning designation, based on the DBH of other remaining trees on the property and replacement trees provided:

a) Any existing residential lot over 10,000 square feet an area shall be required to maintain a minimum of three (3) tree density credits for every 10,000 square feet of lot area. The required minimum credit shall be rounded to the nearest whole number.

b) All other lots zoned R4 or R4.5 shall be required to maintain a minimum of three (3) tree density credits;

c) All other lots zoned R6 or R8 shall be required to maintain a minimum of two (2) tree density credits;

d) All lots zoned R8, R12, or R20 or within MU zones shall be required to maintain a minimum of one (1) tree density credits.

5. For existing residential lots, tree density credit is assigned as assigned by Table 14.40.030.1

Table 14.40.030.1 [NEW TABLE]

Tree Density Credits for Remaining Trees and Replacement Trees on Existing Residential Lots

DBH	Tree Credits
Replacement / Supplemental Tree	1
6" - <10"	0.5
10" - <13"	1
13" - <16"	2
16" +	3

Example: A residential lot owner (7,000 square foot lot) within an R4.5 zone proposing to remove a 15" DBH tree would be required to:

- *Provide at minimum one replacement tree, and*
- *Assess remaining trees on their property to see if the replacement tree (1 credit) + remaining trees (XX credits) = a total of 3 credits. If only one existing tree at 11" DBH would remain after the proposed removal, the property owner would have to plant an additional replacement tree (2 credits for 2 replacement trees + 1 credit for 11" DBH remaining tree = 3 credits)*

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;
2. The tree(s) is determined to be a nuisance, hazard, dead, or dying, consistent with subsection D of this section.
3. Removal is documented as unavoidable and necessary for repair and/or improvements to public facilities, including roadways, sidewalks, utilities, and stormwater infrastructure. In all such instances, tree removal notification shall be submitted to the planning director for concurrence.
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 Notification 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 Tre Removal Notification. Nuisance trees must be documented as such in the Tree Removal Notification 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(A). 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. 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. The installation and maintenance shall be pursuant to DMC 14.40.070 and 14.40.090 respectively.

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

[MOVED TO NEW SECTION PROVIDED – SEE 14.40.025](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.

A. 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:

    e) Engineered professional survey location point for every tree over ten inch (10”) dbh on the site.

    f) 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;

    g) 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.

    h) . 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 4.5’ above grade for all tree 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 planning 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) 4. Suggested location 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

[NOTE: THIS SECTION IS A COMPLETE REPLACEMENT OF CURRENT CODE – NO REDLINE CHANGES INCLUDED, HOWEVER ALL PROVISIONS ARE NEW]

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 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.
3. Tree density credit requirements shall be based on the full site area, excluding wetlands, streams, and/or landslide hazard areas and associated Sensitive Areas buffers.

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

1. Tree Density Calculation. For the purpose of calculating required minimum tree density, public right-of-way, areas to be dedicated as public right-of-way, and vehicular access easements not included as lot area within an improved plat shall be excluded from the area used for calculation of tree density. Sensitive areas and associated buffers to be maintained by the development proposal shall be excluded from the area used for calculation of tree density.

   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 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 in Sensitive Areas and those protected within the 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"	15
12" - <14"	2	26" - <28"	9	40" - <42"	16
14" - <16"	3	28" - <30"	10	42" - <44"	17
16" - <18"	4	30" - <32"	11	44" - <46"	18
18" - <20"	5	32" - <34"	12	46" - <48"	19
20" - <22"	6	34" - <36"	13	48" - <50"	20
22" - <24"	7	36" - <38"	14	≥50"	21

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).

2. Supplemental Trees Planted to Meet Minimum Density Requirement.

   a) 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, 70% of required tree credits.

      b. For sites within Group 2 Subbasins, 50% of required tree credits.

      c. For sites within Group 3 Subbasins, 30% of required tree credits

   b) For sites where existing (pre-development) tree density is not sufficient to meet tree density minimums, retention of all existing significant trees shall be required, and additional tree density credits shall be achieved through supplemental planting.

   c) The director may allow for impacts to significant trees beyond these retention standards only when the applicant demonstrates 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. In such instances, the city may require additional on-site supplemental tree planting 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.

3. 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 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.

[OLD STANDARDS OF THIS SECTION DELETED]

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.060 - New development sites—Priorities for tree retention.

[NOTE: THIS SECTION IS A COMPLETE REPLACEMENT OF CURRENT CODE – NO REDLINE CHANGES INCLUDED, HOWEVER ALL PROVISIONS ARE NEW]

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. The incorporation of trees 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.

2. 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.

3. 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;

   e. Trees that form a grove with on-site exceptional trees that must be retained on the development property or on immediately adjacent properties.

   c. 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;

   d. Trees located in the site perimeter, especially when they provide a screening function between different land uses;

4. Building footprints, parking areas, roadways, utility corridors and other structures should be designed and located with consideration of tree protection opportunities.

5. The grading plan should be developed to accommodate existing trees and avoid alteration to grades around existing trees to be retained as part of a tree retention plan.
6. Required open space and recreational space is located and designed to protect existing stands of trees.

A.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.070 – Priorities for Location of Supplemental Trees

[NOTE: THIS SECTION IS A COMPLETE REPLACEMENT OF CURRENT CODE – NO REDLINE CHANGES INCLUDED, HOWEVER ALL PROVISIONS ARE NEW]

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 new 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, stream, and landslide hazard areas).
   b. Within required common open spaces and recreation spaces as established by the approved site plan;
   c. Adjacent to storm water facilities as approved by Public Works;
   d. Within other site common areas within the approved site plan;
   e. Within site perimeter areas where contiguous with offsite existing forests; and
   f. As street trees; however only within planting strips more than eight (8) feet wide and only when soil conditions are determined adequate to provide for longterm viability of the street tree(s).
   g.
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 space which is 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.
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. [NOTE FOR CONSIDERATION FROM UFS: This amount needs to be high enough per tree to encourage retention of existing trees as well as cover the complete cost of planting viable trees if that is necessary.]

[DELETED EXISTING CODE] (Ord. 1056 § 1 Exh. A (part), 2007)

14.40.075 – Required Yard Trees for New Residential Developments

[NOTE: THIS SECTION IS ENTIRELY NEW FOR THE SECOND DRAFT]

A. All new residential developments shall be required to include yard trees within proposed 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) tree density credits;
2. All newly created lots zoned R6 or R8 shall be required to provide a minimum of two (2) tree density credits;
3. All newly created lots zoned R8, R12, or R20 or within MU zones shall be required to provide a minimum of one (1) tree density credits.

B. Tree density credit is assigned as assigned by Table 14.40.075.1

Table 14.40.075.1

Tree Density Credits for Remaining Trees and Supplemental Trees on New Residential Lots

DBH	Tree Credits
Supplemental Yard Tree	1
6” - <10”	0.5
10” - <13”	1
13” - <16”	2
16” +	3

C. 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 density credit 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 [range from other jurisdictions is 4.5 – 6' ; six feet recommended by consultant team], 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. 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 12

inches, as recommended by USF] 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. [FLAGGED FOR DISCUSSION]

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 – New Development Sites - 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 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.

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. 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. [ENTIRELY NEW SECTION] 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.

(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 [ENTIRE SECTION IS NEW]

"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 be included in and have a diameter at breast height (DBH) that is equal to or greater than the threshold diameters listed in Table 14.40.020.1;
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 14.40.020.1
Exceptional Tree Species and Their Threshold Diameters

Species	Threshold Diameter (DBH)
Bigleaf MAPLE – *Acer macrophyllum*	30 inches
Douglas FIR – *Pseudotsuga menziesii*	30 inches
Sitka spruce – *Picea sitchensis*	6 inches
Vine maple – *Acer circinatum*	8 inches
Western HEMLOCK – *Tsuga heterophylla*	24 inches
Western Red CEDAR – *Thuja plicata*	30 inches
Willows (all native	6 inches

species) – *Salix sp.*	
Orchard (Common) APPLE – *Malus sp.*	20 inches
Giant SEQUOIA – *Sequoiadendron giganteum*	30 inches
Kousa DOGWOOD – *Cornus kousa* Eastern DOGWOOD – *Cornus florida*	12 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 $[(\text{stem } 1)^2 + (\text{stem } 2)^2 + (\text{stem } 3)^2]$).

"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.

"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 six (6) inches diameter at breast height (DBH).

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.