

Sensitive Areas and Tree Protection Update Project Advisory Group

Meeting #8 – Tree Protection Update (*Second of Three Meetings*) Monday, December 11, 2017 – 5:30 to 8:00 KCFD # 45 (15600 1st Avenue NE)

MEETING AGENDA

At this meeting, we will be continuing our focus on updates to Tree Protection standards, with this the second of three planned Advisory Group meetings to provide focused input. The final meeting is scheduled for January 8.

5:30 – 5:40	Introduction Status of SAO: through PC, being considered by Council Takeaways on key update issues from Meeting #1 Agenda preview	No action
5:40 – 6:00	Overview of Initial Draft Structure maintains consistency New Tree Density approach Priorities for Tree Retention and Supplemental Trees New standards to ensure successful implementation	Review draft redline code ahead of meeting
6:00 – 6:50	Review of Key Issues (#1 - #4) and implementation within Code #1 – Definition of “significant tree” #2 – Protection based on a standard goal (or goals) for tree density #3 – Minimum expectations for protection, and allowances for additional impacts #4 – Tree protection within / adjacent to Sensitive Areas	Review draft redline code Discussion
6:50 – 7:30	Priorities for Tree Retention and Supplemental Trees Review of prioritization within Draft Redline code Discussion on options to incentivize (or require) highest priority approaches	Review of code and packet ahead of meeting Discussion
7:30 – 7:50	New standards to ensure successful implementation During planning During construction Post-construction (maintenance and monitoring)	Review of code and packet ahead of meeting Discussion
7:50 – 8:00	Next Steps Draft #2 – Proposed Tree Protection Code Update Next Advisory Group Meeting – Monday, January 8 th , 2017	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, Initial Draft – December 6, 2017

Provided for Advisory Committee Review

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.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.020 - Applicability.

- A. DMC Section 14.40.030 applies to the removal of significant trees 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.
- B. DMC Sections 14.40.040 through 14.40.110 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. 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~~ (46) inches in diameter at breast height (four and one-half feet above the ground).

D. 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 the city's qualified arborist and consistent with the definition in DMC Chapter 14.06.

NEW DEFINITION FOR EXCEPTIONAL TREE TO ADD TO DMC 14.06: Exceptional Tree – 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 14.06.1;
2. The tree shall exhibit healthful vigor for its age and species;
3. 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
4. If retained under current tree growth conditions, the tree can be expected to remain viable with reasonable and prudent management and care.

Table 14.06.1
Exceptional Tree Species and Their Threshold Diameters

<u>Species</u>	<u>Threshold Diameter (DBH)</u>
<u>Bigleaf MAPLE – Acer macrophyllum</u>	<u>42 inches</u>
<u>Douglas FIR – Pseudotsuga menziesii</u>	<u>42 inches</u>
<u>Grand FIR – Abies grandis</u>	<u>33 inches</u>
<u>MADRONA – Arbutus menziesii</u>	<u>12 inches</u>
<u>Western HEMLOCK – Tsuga heterophylla</u>	<u>36 inches</u>
<u>Western Red CEDAR – Thuja plicata</u>	<u>42 inches</u>
<u>Western White PINE – Pinus monticola</u>	<u>36 inches</u>

1

~~E.D. A root protection zone critical 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.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

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

The following regulations shall apply to developed lots:

- A. Any property owner may remove up to two significant trees from a lot each year without a permit, provided that the following criteria are met:
- a. the tree(s) is not in a native growth protection area, sensitive area, or sensitive area buffer;
 - b. the tree is not shown on an approved tree plan as to be retained;
 - c. 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.
 - d. The property owner shall plant one tree for each tree removed.
- B. Significant trees which are a nuisance, Hazard, dead, or dying, ~~trees can may~~ be removed after a letter of request documenting the situation is submitted to the ~~city~~ City by a property owner and/or homeowner's association, and a tree removal permit is granted. In the event that a tree is not obviously dead, dying or a hazard, a ~~letter from a 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. Nuisance trees must be documented as such in the letter of request consistent with the nuisance tree definition in DMC 14.06. 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 (10) 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 other with poorly connected tissue and a pronounced inclusion~~, previous failure in the crown, or other defect as identified by a certified arborist.
- NEW DEFINITION FOR NUISANCE TREE TO ADD TO DMC 14.06: Nuisance Tree – A tree that meets either of the following criteria: a. Is causing obvious physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, utilities or roof; or b. Has sustained damage from past maintenance practices.
- The problems associated with the tree must be such that they cannot be corrected by reasonable practices including but not limited to: pruning of the crown or roots of the tree, bracing, and/or cabling to reconstruct a healthy crown.]
- C. Protection of exceptional trees.
- D. 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 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. 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 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.~~Fa 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. Minimum Size and Tree Density Value for Replacement Trees.~~ The required minimum size of a supplemental 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 XX and 14.40.090 respectively.

~~G.F.~~ Tree replacement may be made through an in-lieu fee in accordance with DMC Section 14.40.070. [KEEP? FOR CONSIDERATION BY CITY AND ADVISORY COMMITTEE – see also section in 14.40.070]

~~H.G.~~ Removal of viable exceptional trees, as defined by this chapter and determined by the city's qualified arborist, is prohibited. [FOR DISCUSSION]

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.040 - New development sites—Submittal requirements.

A. On new development sites, a tree retention plan is required to be submitted with the land use application that sets out the following:

1. Survey of existing site tree condition, containing the following:

a) Engineered professional survey location point for every tree over six inch (6") dbh on the site. [NOTE: This is different than the tree survey required by a professional arborist, which is what is required for trees to be retained under b and c below; alternative approaches to characterized overall site canopy / tree condition could be considered]

b) Size (dbh), species, and location of all significant trees proposed for retention to meet tree density requirements of 14.40.050. Significant trees that are on adjacent properties that have a ~~dripline~~-critical root zone (CRZ) extending on to the property under application shall also be identified an protected;

~~a)c)~~ Size (dbh), species, and location of all exceptional trees across the development site and/or on adjacent properties that have a ~~critical root zone~~CRZ extending on to the property under application.

~~b)d)2.~~ Calculation setting out number of trees, the average number of trees per acre, the number of hazard, dead, or dying trees and the required number of retained trees, both for significant trees and for overall tree retention;

~~e)e)3.~~ Trees proposed for retention

~~d)f)4.~~ Sensitive areas, including buffer and type. 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. However, a Level I Limited Tree Risk Assessment [NEED TO DEFINE] is recommended for any trees that target structures and high use areas for safety reasons.

B2. The Tree Retention Plan shall be submitted with a professional evaluation and/or a tree protection plan prepared by a qualified arborist [NEED TO DEFINE]. ~~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 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-con meeting with project and city arborist 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 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. 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. 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 that will ensure a good probability for survival.

Table 14.40.050.1
Required Minimum Tree Credits

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

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:

- ~~g)~~ Diameter at breast height (DBH) of the tree shall be measured in inches.
- ~~h)~~ 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).
- ~~i)~~ Retained red alder and cottonwood trees shall ~~each~~ count as 0.5 credits toward the tree density requirement for the site, except where occurring as a hazard or nuisance tree.
- ~~j)~~ 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
3" - <6"	0.5				
6" - <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 ($50 \times 0.22 = 11$). 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 ($4 \text{ tree credits} \times 1.5 = \text{six (6) tree credits}$).

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.
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.

The Director may allow for impacts to significant trees beyond these 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.

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 arborist. In designing a development project, the applicant shall prepare the required tree retention plan with consideration of the following retention priorities:
 - a. Tree groves and associated vegetation that are adjacent to areas that are proposed to be set aside as native growth protection areas (sensitive areas and protected buffers), such that retained trees provide additional habitat, hydrologic, water quality, and land stability functions;
 - b. Trees that will be located within a fish and wildlife habitat corridor, as established by the development proposal consistent with DMC Chapter 14.42;
 - c. Trees that 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;

- e. Contiguous with exceptional trees that must be retained on the development property or on immediately adjacent properties.
 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.;
 - 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. **[FROM EXISTING CODE, EXCEPT AS PROVIDED IN TRACKCHANGES BELOW - MAINTAINING THIS ALLOWANCE TO BE CONSIDERED BY THE CITY]**
 - 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)~~

14.40.080 - 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

b) ~~4. No proposed structure, utility, or roadway shall be located in the root protection zone of 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) [NEED TO DEFINE].

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.

~~e)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, Tthe 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 aAn 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]**~~

~~B8. 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 - Maintenance.

- A. ~~Any existing retained tree or if required replacement supplemental 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 ~~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.

BC. 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. ~~Significant~~ 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.
- 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 for the life of the project, 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.
- C. Significant trees that are saved in excess of ~~those required to meet the required thirty-five (35) percent minimum tree density~~ shall not be subject to subsection A or 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).

(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)

City of Duvall Chapter 14.40 - TREE PROTECTION

Proposed Updates, Initial Draft – December 6, 2017

Provided for Advisory Committee Review

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.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.020 - Applicability.

- A. DMC Section 14.40.030 applies to the removal of significant trees 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.
- B. DMC Sections 14.40.040 through 14.40.110 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. For the purposes of this chapter, a significant tree is any tree, other than red alder and cottonwood trees, that measures a minimum of six (6) inches in diameter at breast height (four and one-half feet above the ground).

- D. 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 the city’s qualified arborist and consistent with the definition in DMC Chapter 14.06.

[NEW DEFINITION FOR EXCEPTIONAL TREE TO ADD TO DMC 14.06: Exceptional Tree – 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 14.06.1;
2. The tree shall exhibit healthful vigor for its age and species;
3. 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
4. If retained under current tree growth conditions, the tree can be expected to remain viable with reasonable and prudent management and care.

**Table 14.06.1
 Exceptional Tree Species and Their Threshold Diameters**

Species	Threshold Diameter (DBH)
Bigleaf MAPLE – <i>Acer macrophyllum</i>	42 inches
Douglas FIR – <i>Pseudotsuga menziesii</i>	42 inches
Grand FIR – <i>Abies grandis</i>	33 inches
MADRONA – <i>Arbutus menziesii</i>	12 inches
Western HEMLOCK – <i>Tsuga heterophylla</i>	36 inches
Western Red CEDAR – <i>Thuja plicata</i>	42 inches
Western White PINE – <i>Pinus monticola</i>	36 inches

- E. A critical 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).

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.030 - Tree Removal – Not Associated with Development Activity

The following regulations shall apply to developed lots:

- A. Any property owner may remove up to two significant trees from a lot each year without a permit, provided that the following criteria are met:

- a. the tree(s) is not in a native growth protection area, sensitive area, or sensitive area buffer;
 - b. the tree is not shown on an approved tree plan as to be retained;
 - c. 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.
 - d. The property owner shall plant one tree for each tree removed.
- B. Significant trees which are a nuisance, hazard, dead, or dying, may be removed after a letter of request documenting the situation is submitted to the City by a property owner and/or homeowner's association, and a tree removal permit is granted. 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 letter of request. Nuisance trees must be documented as such in the letter of request consistent with the nuisance tree definition in DMC 14.06. 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 (10) 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 with poorly connected tissue and a pronounced inclusion, previous failure in the crown, or other defect as identified by a certified arborist.

[**NEW DEFINITION FOR NUISANCE TREE TO ADD TO DMC 14.06:** Nuisance Tree – A tree that meets either of the following criteria: a. Is causing obvious physical damage to private or public structures, including but not limited to: sidewalk, curb, road, [driveway](#), [parking lot](#), building foundation, utilities or roof; or b. Has sustained damage from past maintenance practices.

The problems associated with the tree must be such that they cannot be corrected by reasonable practices including but not limited to: pruning of the crown or roots of the tree, bracing, and/or cabling to reconstruct a healthy crown.]

- C. Protection of exceptional trees.
- D. 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 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. 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 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.

- 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 two trees to one tree ratio.
- F. 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 XX and** 14.40.090 respectively.
- G. Tree replacement may be made through an in-lieu fee in accordance with DMC Section 14.40.070. **[KEEP? FOR CONSIDERATION BY CITY AND ADVISORY COMMITTEE – see also section in 14.40.070]**
- H. Removal of viable exceptional trees, as defined by this chapter and determined by the city's qualified arborist, is prohibited. **[FOR DISCUSSION]**

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.040 - New development sites—Submittal requirements.

- A. On new development sites, a tree retention plan is required to be submitted with the land use application that sets out the following:
 - 1. Survey of existing site tree condition, containing the following:
 - a) Engineered professional survey location point for every tree over six inch (6") dbh on the site. **[NOTE: This is different than the tree survey required by a professional arborist, which is what is required for trees to be retained under b and c below; alternative approaches to characterized overall site canopy / tree condition could be considered]**
 - b) Size (dbh), species, and location of 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 an protected;
 - c) Size (dbh), species, and location of all exceptional trees across the development site and/or on adjacent properties that have a CRZ extending on to the property under application.
 - d)
 - e) . Trees proposed for retention
 - f) . Sensitive areas, including buffer and type. 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. However, a Level I Limited Tree Risk Assessment **[NEED TO DEFINE]** is recommended for any trees that target structures and high use areas for safety reasons.
 - 2. The Tree Retention Plan shall be prepared by a **qualified** arborist **[NEED TO DEFINE]** 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-con meeting with project and city arborist 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 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. 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. 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 that will ensure a good probability for survival.

Table 14.40.050.1
Required Minimum Tree Credits

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

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:

- g) Diameter at breast height (DBH) of the tree shall be measured in inches.
- h) 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).
- i) Retained red alder and cottonwood trees shall each count as 0.5 credits toward the tree density requirement for the site, except where occurring as a hazard or nuisance tree.
- j) 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
3" - <6"	0.5				
6" - <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.
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.

The Director may allow for impacts to significant trees beyond these 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.

[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 an arborist. In designing a development project, the applicant shall prepare the required tree retention plan with consideration of the following retention priorities:
 - a. Tree groves and associated vegetation that are adjacent to areas that are proposed to be set aside as native growth protection areas (sensitive areas and protected buffers), such that retained trees provide additional habitat, hydrologic, water quality, and land stability functions;
 - b. Trees that will be located within a fish and wildlife habitat corridor, as established by the development proposal consistent with DMC Chapter 14.42;
 - c. Trees that 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;
 - e. Contiguous with exceptional trees that must be retained on the development property or on immediately adjacent properties.
 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.;
 - 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 long-term 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. **[FROM EXISTING CODE, EXCEPT AS PROVIDED IN TRACKCHANGES BELOW - MAINTAINING THIS ALLOWANCE TO BE CONSIDERED BY THE CITY]**
 - 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)

14.40.080 - 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) 5. 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 the project and city arborist
 - 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) [NEED TO DEFINE]**.
 - 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 - 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 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. 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 three trees to one tree ratio.
- B. Trees that are shown on a plan as to be retained as part of the minimum tree density requirement shall be retained for the life of the project, 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.
- C. Significant trees that are saved in excess of those required to meet the minimum tree density shall not be subject to subsection A or 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).

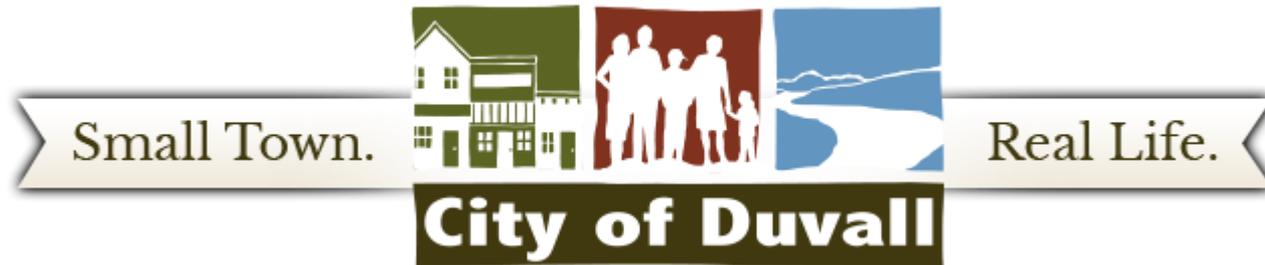
(Ord. 1056 § 1 Exh. A (part), 2007)

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)



City of Duvall Sensitive Areas and Tree Protection Update

Advisory Group Meeting #8

Lara Thomas, Planning Director

Aaron Booy, ESA

Jim Barborinas, Urban Forestry Services, Inc.

December 11, 2017



5:30 – 5:40	<p>Introduction</p> <ul style="list-style-type: none"> Status of SAO: through PC, being considered by Council Takeaways on key update issues from Meeting #1 Agenda preview
5:40 – 6:00	<p>Overview of Initial Draft</p> <ul style="list-style-type: none"> Structure maintains consistency New Tree Density approach Priorities for Tree Retention and Supplemental Trees New standards to ensure successful implementation
6:00 – 6:50	<p>Review of Key Issues (#1 - #4) and implementation within Code</p> <ul style="list-style-type: none"> #1 – Definition of “significant tree” #2 – Protection based on a standard goal (or goals) for tree density #3 – Minimum expectations for protection, and allowances for additional impacts #4 – Tree protection within / adjacent to Sensitive Areas
6:50 – 7:30	<p>Priorities for Tree Retention and Supplemental Trees</p> <ul style="list-style-type: none"> Review of prioritization within Draft Redline code Discussion on options to incentivize (or require) highest priority approaches
7:30 – 7:50	<p>New standards to ensure successful implementation</p> <ul style="list-style-type: none"> During planning During construction Post-construction (maintenance and monitoring)
7:50 – 8:00	<p>Next Steps</p> <ul style="list-style-type: none"> Draft #2 – Proposed Tree Protection Code Update Next Advisory Group Meeting – Monday, January 8th, 2017



DMC
14.40

How does the City protect trees? On Developed Lots

- Removal of 2 significant trees per lot each year without a permit
 - May not occur in a sensitive area / buffer;
 - Not a retained tree on an approved tree retention plan
 - Not the last 1 or 2 trees on the lot
- Removal of hazard, dead, or dying trees (*arborist review may be required*)
- Letter of request / notification to City required
- Replacement required at 1 to 1 ratio
 - For last 1 or 2 trees on lot, or for “retained trees”, removal on developed lots may be allowed with higher replacement ratio

DMC
14.40

How does the City protect trees? On Developed Lots

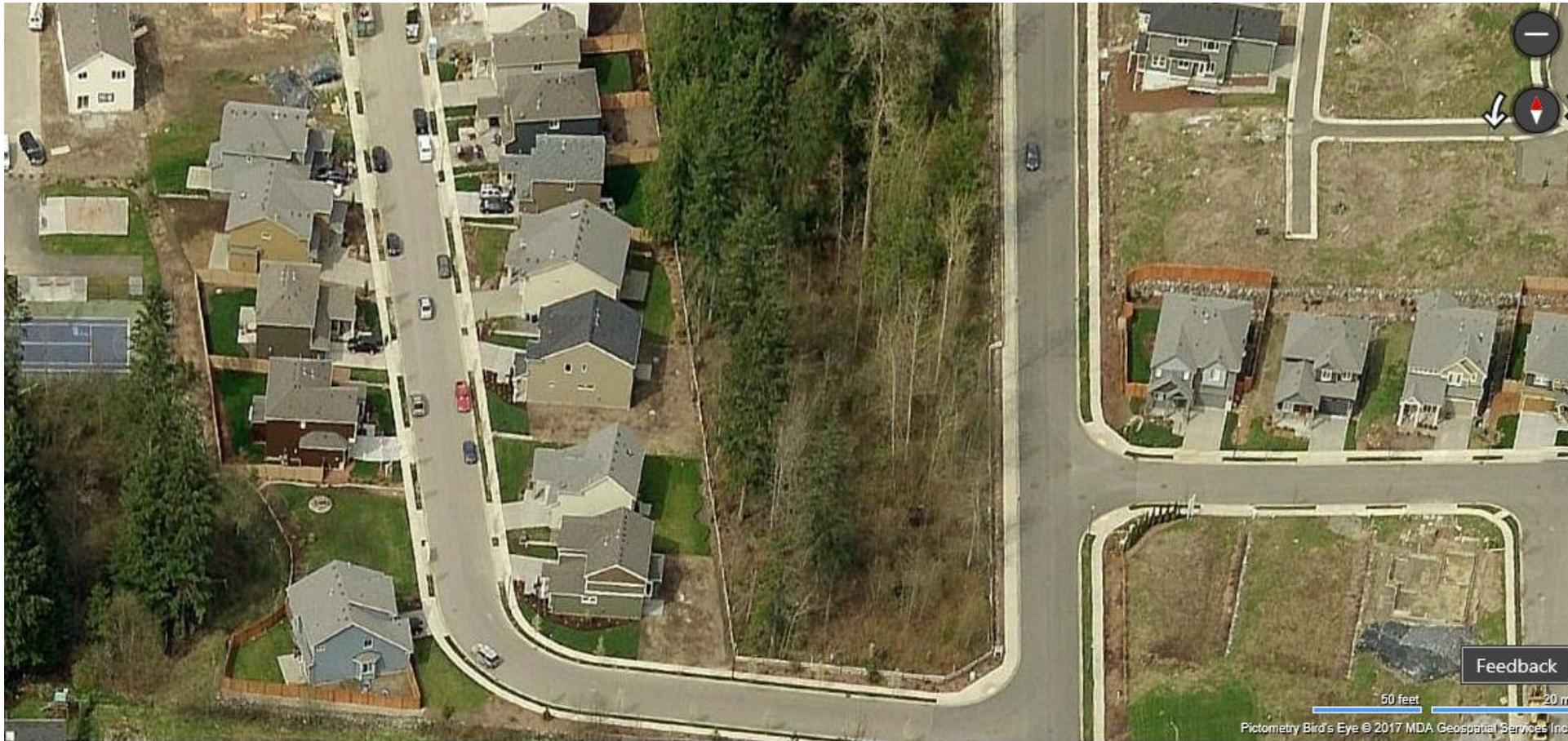


DMC
14.40

How does the City protect trees? New Development Sites

- Inventory required
(size, species, location for all significant trees)
- Tree Retention Plan
 - Minimum of 35% of significant trees shall be retained
 - Does not include hazard, dead, or dying trees
 - Priority for retention w/in Sensitive Areas/buffers, but 25% have to be in remainder of site (if possible)
 - Retention + Replacement must meet “no net loss”
- Development flexibilities with additional retention
- Site planning must consider City tree retention priorities
- Allowance for replacement at 3:1 ratio if retention of 35% isn't feasible

How does the City protect trees? New Development Sites



Overview of Initial Draft Update

- Maintains general structure
- Redefines “significant tree” as all trees 6” DBH or greater
- Stronger protections for very large “exceptional trees”
- For new development, integrates minimum density approach (similar to Kirkland)
- Priorities for Tree Retention & Tree Replacement
- New standards for successful implementation (including 5 years of monitoring / maintenance)

Proposed Updates – Definition of “Significant Tree”

- Current definition is 16” DBH or greater
- Example codes go lower:
 - 6” DBH or greater in Kirkland and LFP
 - 8” DBH conifer / 12” DBH deciduous in Sammamish
- Proposed code: 6” DBH or greater

TREE SIZES AND GROUPS

- BIG TREES ARE GREAT BUT HARDER TO SAVE.



- SMALLER TREES ARE MORE VIGOROUS-CAN GROW OVER TIME.



Proposed Update: Additional protections for larger trees

- Currently all significant trees are treated the same
- Options for additional designations:
 - “Exceptional trees” – specific species and sizes (32” +) that can’t be removed (LFP)
 - “Landmark” (32” +) / “Heritage” (22” +) trees afforded greater protection – additional retention credit; require higher replacement ratios (Samm)
 - “Specimen” (viable tree in very good to excellent health; free of major defects) & “heritage” (valued due to unique characteristics) (Woodinville)



Proposed Update: Additional protections for larger trees

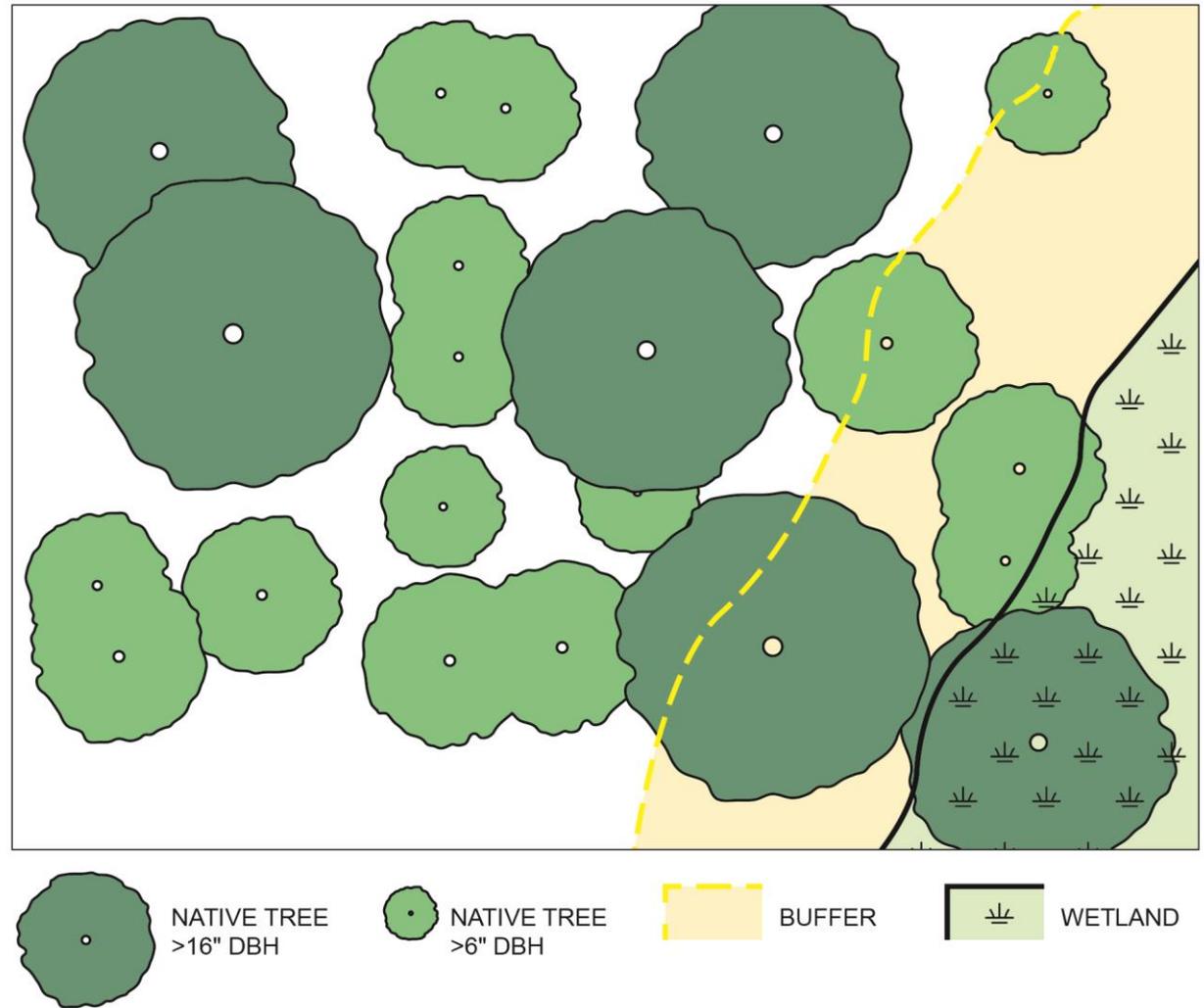
- Proposal = Exceptional Trees defined, and provided higher level of protection
- Initial threshold diameters → → → Advisory Committee suggested reduction of these widths

Species	Threshold Diameter (DBH)
Bigleaf MAPLE – <i>Acer macrophyllum</i>	42 inches
Douglas FIR – <i>Pseudotsuga menziesii</i>	42 inches
Grand FIR – <i>Abies grandis</i>	33 inches
MADRONA – <i>Arbutus menziesii</i>	12 inches
Western HEMLOCK – <i>Tsuga heterophylla</i>	36 inches
Western Red CEDAR – <i>Thuja plicata</i>	42 inches
Western White PINE – <i>Pinus monticola</i>	36 inches

Proposed Update – Basis of tree protection requirement

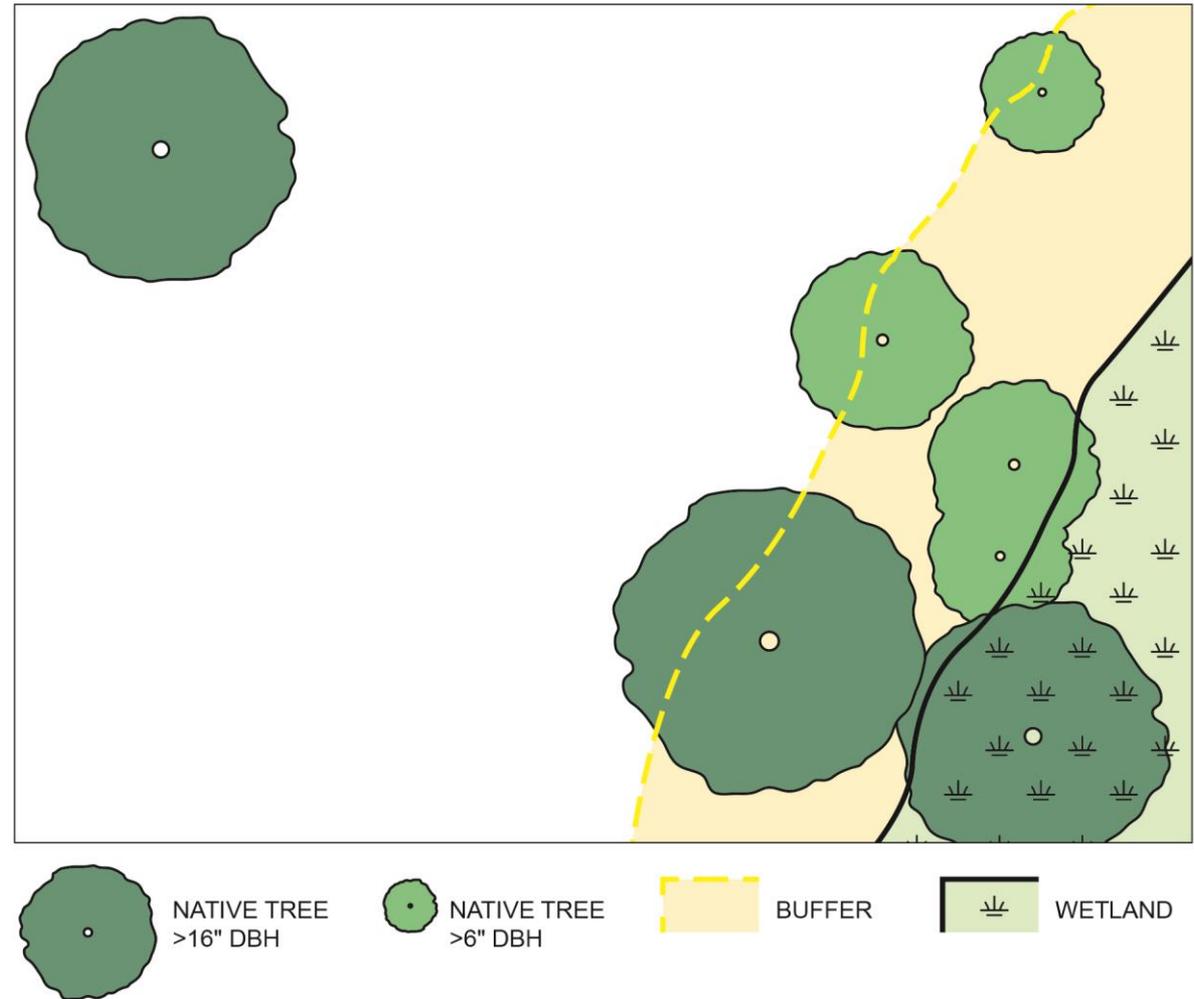
- Currently, protections are based on existing site conditions & the number of significant trees
- Options for updates to basis:
 - Providing additional variation in “existing site conditions” approach – variable standard based on Zoning / Subbasin
 - Minimum tree density approach (Kirkland)
 - Tree canopy cover approach (Lake Forest Park)
- Proposal – Minimum tree density approach, with development sites required to maintain minimum tree density, based on zoning

Tree Protection – Existing Standards for New Development



- » Tree survey required throughout site for all trees >16" DBH (defined as "significant")
- » 35% retention, except where infeasible without interfering with development objectives

Tree Protection – Existing Standards for New Development



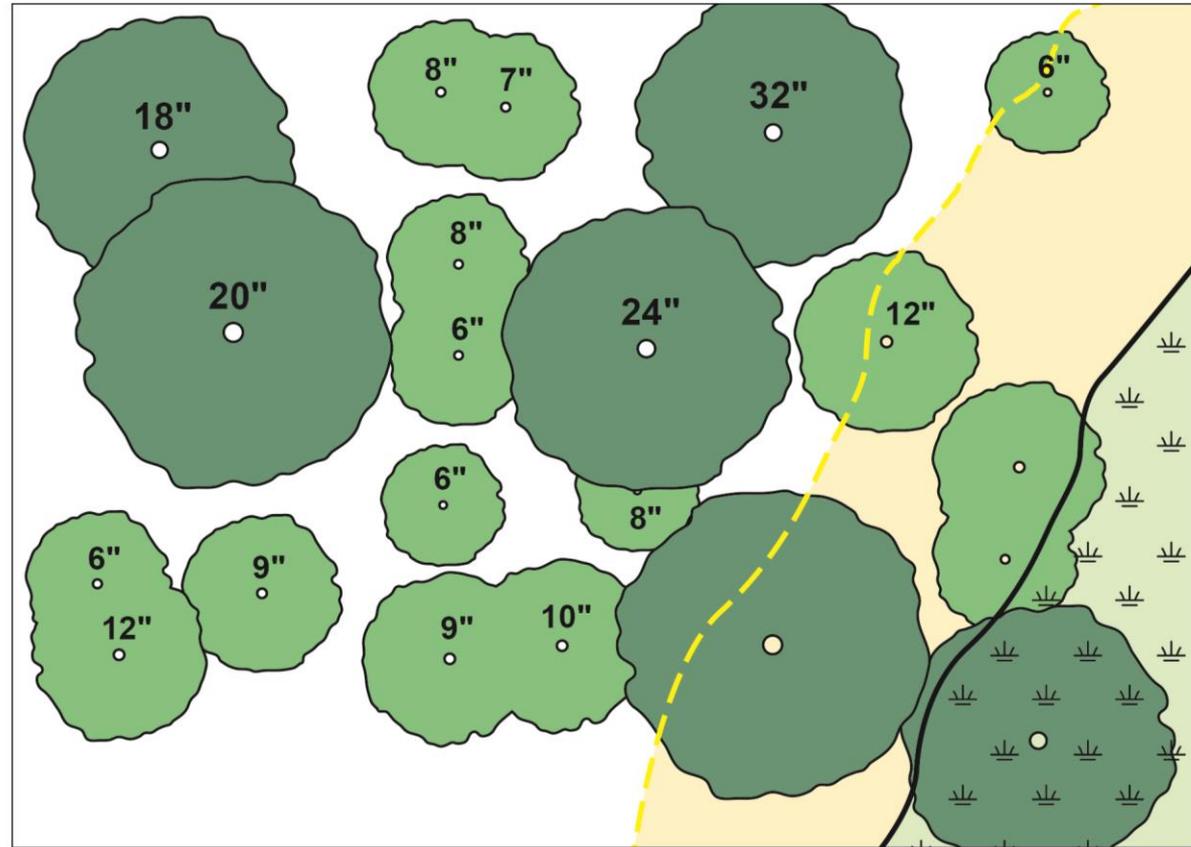
» 75% of retention requirement met within NGPA

» Almost all trees cleared outside of NGPA (including significant trees)

» No protection for smaller trees

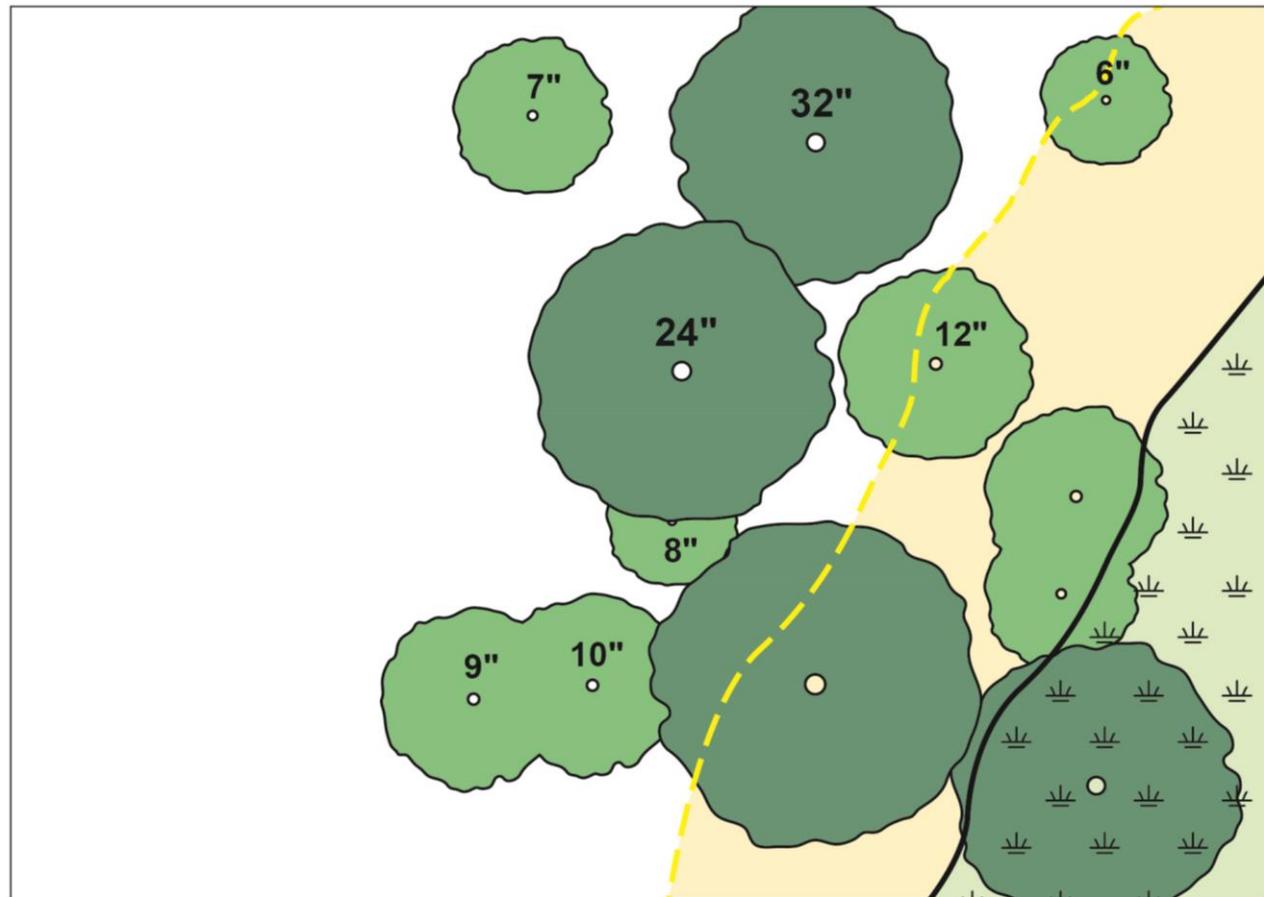
Proposed Minimum Density Approach

Site with lots of mature trees



- » >6" DBH significant
- » Tree survey required (except within sensitive areas and required buffers)
- » Variable minimum density requirement based on underlying zoning

Implications
Site with lots of mature trees

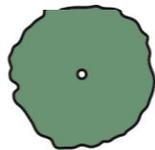
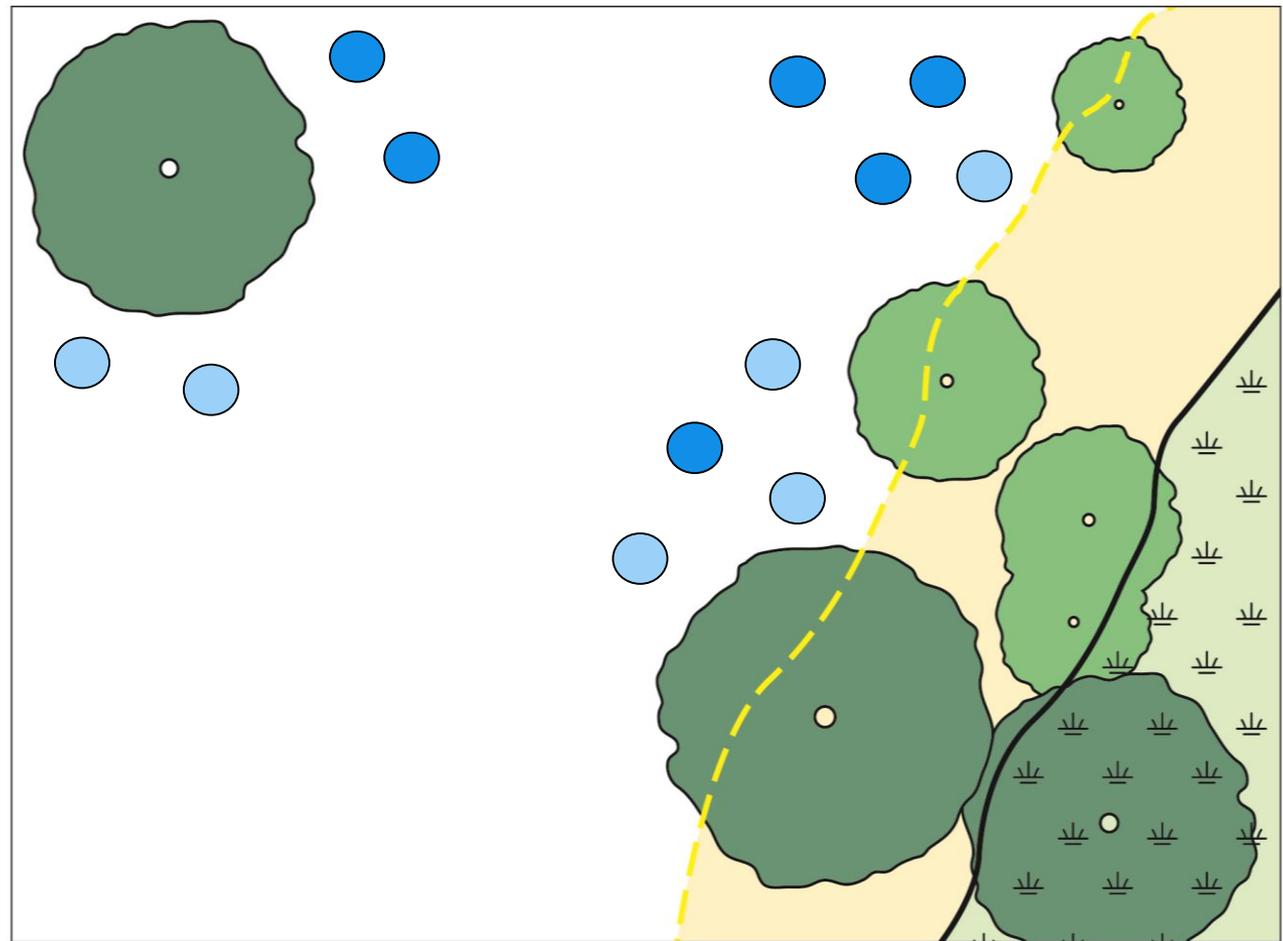


- » R4.5 zoned lot; Subbasin Mngmnt Group 2
- » 40% minimum density required outside of NGPA
- » Credit toward minimum density calculated based on DBH of existing trees (more credit for larger trees)

Implications

Former pasture site,
with few mature trees

Trees must be planted
to meet minimum
density requirement



NATIVE TREE
>16" DBH



NATIVE TREE
>6" DBH



BUFFER



WETLAND

- » R4.5 zoned lot; Subbasin Mngmnt Group 2
- » 40% minimum density required outside of NGPA
- » Credit toward minimum density calculated based on DBH of existing trees (more credit for larger trees)

Proposed update – Limiting current allowance for additional impacts



2014



2017
Google Earth

Proposed update – Limiting current allowance for additional impacts

- For all sites with existing trees, a portion of required minimum tree density must be achieved through retention
 - 70% for sites w/in Group 1 subbasins
 - 50% for sites w/in Group 2 subbasins
 - 30% for sites w/in Group 3 subbasins

Tree protection within/adjacent to sensitive areas

- Current standards:
 - Survey required throughout Sensitive Area and buffer, even though areas must be left in natural condition
 - Up to 75% of trees retained can be in Sensitive Area and buffer
 - 25% outside of buffer
- Proposed approach – not considering Sensitive Areas and associated buffers as part of Tree Protection code

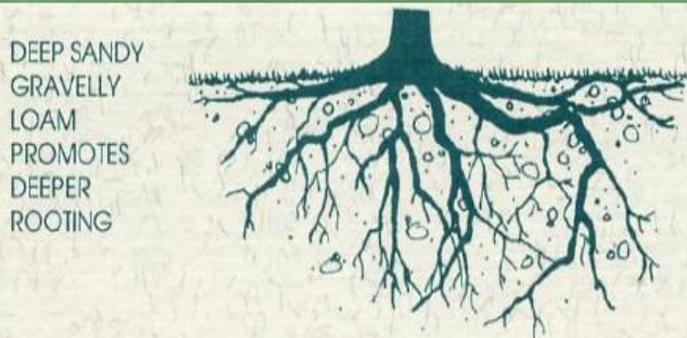
TREES ALREADY PROTECTED IN THESE AREAS – NO NEED TO COMPLETE TREE SURVEY, OR GIVE CREDIT FOR RETENTION

SPECIES RETENTION QUALITIES

DOUGLAS FIR	BEST	TOUGH FAST GROWING. TOLERATES ROOT DISTURBANCE.
WESTERN RED CEDAR	GOOD	SHADE AND WET TOLERANT, GOOD SCREENING TREE.
BIGLEAF MAPLE	GOOD	FAST GROWING AND TOLERATES ROOT DISTURBANCE.
WESTERN HEMLOCK	FAIR TO POOR	SHADE TOLERANT BUT DECLINES FROM ROOT DISTURBANCE.
RED ALDER	POOR	POOR ROOTS AND STRUCTURE EVEN WHEN HEALTHY
COTTONWOOD	POOR	FAST GROWING, HUGE TREE, WITH LIMB DROP AND INVASIVE ROOTS.

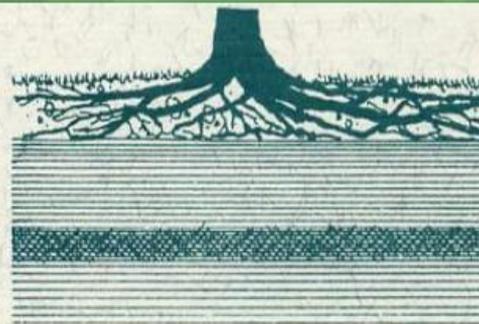
Additional considerations for Tree Protection update

Species



Good soils for saving trees

SOILS



Poor soils for saving trees

Soils

Credit: UFS

Additional considerations for Tree Protection update



- Standards to facilitate successful:
- Review
 - Planning
 - Implementation
 - monitoring

Source: UFS