

Kitsap County Comprehensive Plan: Tree Canopy Requirements

Title 17 Zoning

Chapter 17.495 Tree Replacement

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17.495.010 Purpose.

This Section shall establish tree canopy standards for properties undergoing development to promote the incorporation of trees into future development in the urban growth areas of unincorporated Kitsap County. A healthy tree canopy contributes to physical and mental health, safety, aesthetics, and overall welfare of the public. Trees may also mitigate the effects of urban development including the loss to native wildlife biodiversity, increased temperatures, airborne particulates, carbon dioxide, noise, and stormwater runoff caused by increases in impervious surfaces and vehicular traffic. The retention of existing trees is encouraged by these regulations.

17.495.020 Applicability

- A. Tree canopy requirements shall apply to subdivision of land or single-family and multi-family development creating four (4) or more developable lots or units within unincorporated urban growth areas.
- B. Tree canopy shall be determined based on the required tree density of a property expressed as tree units per acre.
- C. Trees or vegetation required by other regulations (e.g. landscaping, critical area buffers) may count towards these standards.
- D. Retention of trees greater than 18 inches DSH is encouraged.
- E. Tree retention is preferred to tree replacement.

17.495.030 Tree Density Requirements by Land Use Zone

A. A minimum tree density, expressed as a *tree unit credit per acre*, shall be maintained on the gross acreage of the lot as specified in Table 17.495.030-1. Only healthy, trees can count toward the required minimum tree density per Table 17.495.030-2. If the number of trees required includes a fraction of a tree, any amount equal to or greater than one-half (1/2) shall be rounded up. Tree density may be achieved through use of the replacement or retention standards of this Chapter, or a combination of replacement and retention.

**Table 17.495.030-1
Minimum Tree Unit Credits by Land Use Zone**

Comprehensive Plan Land Use Designation	Land Use Zone	Tree Unit Credits per Gross Acre ^{1,2}
Urban Low Residential	Urban Restricted	20
	Urban Low Residential	
	Urban Cluster Residential	
	Greenbelt	
Urban Medium Residential	Urban Medium Residential	10
Urban High Residential	Urban High Residential	10
Urban Low Intensity Commercial	Urban Village Center	15
	Neighborhood Commercial	
Urban High Intensity Commercial	Commercial	10
	Regional Center	
	Low Intensity Commercial	

1 If the calculation results in a fractional quantity, it shall be rounded to the nearest whole number (greater than or equal to 0.5 is rounded up; less than 0.5 is rounded down).

2 Trees growing on a property line shall count towards the tree credits listed.

- B. The following process shall be used for calculating required minimum tree unit credits. The required tree credits shall be multiplied by the gross acreage of the lot:
- C. Tree density requirements for a lot can be met by trees located within shoreline jurisdiction, critical areas, and their associated buffers. Tree management and protection within critical areas and their buffers are regulated by Kitsap County Title 19 *Critical Areas Ordinance* and trees within shoreline jurisdiction are regulated by the Shoreline Master Program.
- D. Lots under development subject to the tree density requirements of Table 17.495.030-1 shall meet the required minimum tree density through the planting of replacement trees and/or by retaining existing on-site trees.

E. Existing on-site tree unit credits shall be calculated according to Table 17.495.030-2.

**Table 17.495.030-2
Credit Values for Existing and Replacement Trees**

Tree Category (DBH¹ or Size)	Tree Unit Credit (per tree)
Existing healthy trees between 1" and up to 8" DBH	1
Existing Larger than 8" and up to 12" DBH	1.5
Existing Larger than 12" and up to 18" DBH	2
Existing Larger than 18" and up to 24" DBH	3
Existing Larger than 24" DBH	3.5
Replacement 2-inch caliper deciduous or broadleaf tree	.5
Replacement 6-foot-tall evergreen, conifer tree	1

1 *Diameter at breast height (DBH), which means the diameter of a tree trunk measured at 4.5 feet above average grade, is used in determining the diameter of existing trees. Where a tree has a branch(es) or swelling that interferes with the measurement at 4.5 feet above average grade or where a tree tapers below this point, the diameter is measured at the narrowest point below 4.5 feet. For trees located on a slope, the diameter is measured from the average of the highest and lowest ground points or, on very steep slopes where this is not possible, the lowest practical point on the uphill side. Where a tree splits into several trunks close to ground level, the DBH for the tree is the square root of the sum of the DBH for each individual stem squared (example with 3 stems: $DBH = \text{square root} [(stem1)^2 + (stem2)^2 + (stem3)^2]$).*

17.495.040 Retained Tree Specifications

Trees to be retained on site shall meet the following minimum standards to be credited toward the tree unit density requirements of this Section:

- A. Post-development life expectancy of greater than 10 years; and
- B. Sound and solid trunk with no extensive decay or hollow and no trunk damage that would cause mortality; and
- C. No major insect or pathological problem; and

- D. Individual trees and groupings of trees proposed for retention shall be wind-firm in their post development state; and
- E. Trees greater than 8 inches DBH located within a critical area or shoreline and associated buffers may be credited toward the tree unit density requirements; and
- F. No species included on a State or County invasive, nuisance, or species of concern list may be retained for credits and native varieties are preferred.

17.495.050 Replacement Tree Specifications

- A. Any trees planted to meet the landscaping requirements of KCC Chapter 17.500 Landscaping shall count towards the required minimum tree unit credits provided they meet the planting specifications outlined in KCC 17.500.030 *Installation and maintenance*.
- B. Trees planted in public rights-of-way or areas to be dedicated as public-right-of-way shall not count toward a private lot's existing or replacement tree unit credits.
- C. Each replacement tree proposed for planting must meet the following minimum standards to be credited toward satisfying the tree density requirements of this Section.
 - 1. **Minimum Size.** The required minimum size of a replacement tree shall be six feet tall for native or other conifer species and two-inch caliper for deciduous or broad-leaf evergreen trees. Additional credits may be awarded for larger sized trees, as determined by the Director;
 - 2. **Health and Condition.** Trees shall be free from injury, pests, diseases, and nutritional disorders and must be fully branched and have a healthy root system.
 - 3. **Species Selection and Form.**
 - a. Replacement trees proposed to be planted within open space, greenbelts, native buffer areas, and landscape areas, such as street trees, must be compatible with the intended growing location using a Right Plant, Right Place approach which ensures that the correct plant is selected for the right location and conditions, allowing them to thrive with little or no irrigation, fertilizer or pesticide and provide appropriate habitat. Conditions should include light, soil, pH, moisture and hardiness;
 - b. Replacement trees must be consistent with the species list shown in KCC 17.495.080.
 - c. Individual species of non-native replacement trees planted shall not exceed 35 percent of the total number of all replacement trees; and
 - d. Trees planted to form a clipped or sheared hedge, such as but not limited to Arborvitae or Cherry Laurel, shall not be counted toward tree unit credits.
 - 4. **Tree Location**
 - a. Replacement trees shall be planted within the proposed development;

- b. Developments shall locate a minimum of 50 percent of the required trees in protected tracts, such as roadway, tree conservation, recreation, stormwater tracts, and critical area tracts;
 - c. Trees may be planted on a solitary basis or within clusters to form stands or groves.
5. Installation and Maintenance. Replacement trees shall follow maintenance and installation standards outlined in Ch 17.500 Landscaping.

17.495.060 Tree Canopy Protection Plan

- A. At the time of application, information regarding a property's required tree density, existing tree unit credits, and required replacement planting shall be shown on the site plan to support the design and location of the proposed development. Tree density and credit calculations as well as required replacement trees may be shown on a required Landscape Plan per KCC 17.500.020. Tree replacement plans shall be prepared, submitted, and approved prior to the approval of site development permits.
- B. The plans shall be drawn to the same scale as the site plan, show approximate locations of trees to be retained or planted, shall meet the applicable standards of this Chapter, and shall include:
 - 1. Trees with a DSH between 1-inch, but under 8 inches shall be inventoried and located if the trees are intended to be used to meet tree unit density requirements;
 - 2. Where a sampling method is proposed for heavily treed project sites, standards shall follow accepted industry methods as determined by a Professional Forester or licensed Landscape Architect. Trees on the site counted towards the requirements shall be identified and labeled on the plan with species name and diameter at standard height (DSH);
- C. Protection fencing and other tree and soil protection measures shall be shown on the Plan when clearing and grading is proposed within the critical root zone of retained trees.
- D. The plan shall include a permanent protection mechanism. This legal protective mechanism may include protection of trees within an open space, recreational or buffer tract; or a recorded covenant indicating the location and credit for each tree. Should a credited tree need to be removed in the future, replacement with like credits will be required.

17.495.070 Tree Protection During Construction.

Prior to land clearing or grading associated with a development project, retained trees, vegetated areas, and soils to be preserved, shall be protected during construction. Protection measures shall include the following:

- A. Trees to be retained shall have readily visible temporary protection at their critical root zones.
 - 1. Temporary fencing must be adequate to protect the critical root zones of trees designated for retention, vegetation, and native soil.

2. Where circumstances warrant, the Director may require more substantial tree protection, as necessary, to protect intrusion of construction into the critical root zones.
- B. No person shall conduct any activity within the tree protection fencing of a retained tree.
1. Machinery and storage of construction materials shall be kept outside of the critical root zones of trees designated for retention.
 2. The code administrator may require fencing beyond the critical root zones if, in the code administrator’s determination, such additional protection is needed to protect the tree from damage.
 3. Trees designated for retention shall not be damaged by scoring, grading, compaction of soil, dumping concrete washout or other chemicals, attaching objects to trees, altering drainage, or other activities that may cause damage of roots, trunks, or surrounding vegetation.
 4. The Director may allow certain activities to be approved by and under the supervision of a qualified tree professional at the expense of the applicant.
- C. When feasible, applicant shall shore basements and other extensive excavations to avoid impacts within critical root zones and cantilever structures over critical root zones.

17.495.080 Tree Species Selection

Common Name	Latin Name
Bigleaf Maple	<i>Acer macrophyllum</i>
Bitter Cherry	<i>Prunus emarginata</i>
Black Cottonwood	<i>Populus balsamifera</i>
Black Hawthorne	<i>Crataegus douglasii</i>
Cascara	<i>Rhamnus purshiana</i>
Douglas’ Maple	<i>Acer glabrum</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
Grand fir	<i>Abies grandis</i>
Hooker’s Willow	<i>Salix hookeriana</i>
Madrone	<i>Arbutus menziesii</i>
Oregon Ash	<i>Fraxinus latifolia</i>
Oregon white oak/Garry Oak	<i>Quercus garryana</i>
Pacific crabapple	<i>Malus fusca</i>
Pacific dogwood	<i>Cornus nuttallii</i>
Pacific willow	<i>Salix lasiandra</i>
Paper birch	<i>Betula papyrifera</i>
Quaking aspen	<i>Populus tremuloides</i>
Red alder	<i>Alnus rubra</i>
Shore pine	<i>Pinus contorta var. contorta</i>
Sitka spruce	<i>Picea sitchensis</i>
Sitka willow	<i>Salix sitchensis</i>
Slide alder	<i>Alnus viridis</i>

Common Name	Latin Name
Vine maple	<i>Acer circinatum</i>
Western hemlock	<i>Tsuga heterophylla</i>
Western redcedar	<i>Thuja plicata</i>
Western white pine	<i>Pinus monticola</i>
Yew (Pacific)	<i>Taxus brevifolia</i>

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