

12.0 STREET TREE SELECTION AND INSTALLATION STANDARDS:

12.1 Work Notification

When any substantial pruning or removal of any tree in excess of 6" DBH or any tree within 15' of an energized power line within City right-of-way is proposed, a Public Works Right-of-Way Construction Permit must first be obtained from the Public Works Department except as provided for in the PMC. All trees within 10' of energized power lines (located on private or public property) requires notification and coordination with the local utility provider (Puget Sound Energy and associated Asplundh work crews) in regards to the work being completed; no tree company or individual may prune or remove any portion of any tree within 10' of an energized power line. Nothing in this manual shall be construed to exempt any person, firm or corporation from the requirement of obtaining any additional permits or insurance as required by law.

12.2 Tree Installation Census

For new tree plantings in any street right-of-way or established street tree easement, a street tree installation census must be completed. If the street tree installation is part of an approved site plan development, the census shall be completed during the final plan approval process. No fee shall be charged for this census and it may be obtained from the Development Services Permit Center.

12.3 Street Tree Material Standards

A. Street trees shall be provided as part of the development process as defined in the PMC 11.28 (see Appendix 20.1). Street trees are defined as trees with a mature height greater than 15 feet located within public rights-of-way or established easement along an existing or proposed street.

B. Selection of street tree species and planting location shall conform with PMC Chapter 11.28, this document and be coordinated with the Development Services Planning Division and Parks Maintenance Division.

C. Street trees shall be located in the public right-of-way or assigned easement and adhere to the design intent and objectives, spacing, location and requirements stated herein. The Planning Director and/or designee(s) shall review and approve any proposed species/cultivar substitution/deviation from the approved street tree species list below.

D. Street trees shall meet all general plant material requirement with the exception of size which shall be as described below at time of installation:

- (1) Large street trees (40' or greater at maturity) shall be a minimum of 1 inch in caliper measured 4" inches above ground at time of installation;
- (2) Street tree with a mature height less than 40 feet shall be a minimum of 6 feet tall at time of installation.

12.4 Street Tree Location and Spacing

Guidelines have been established to reduce potential conflicts between trees and streets, sidewalks, sewers, pedestrian and vehicular safety, while pursuing the goals set by the Comprehensive Plan of attractive urban spaces with tree lined streets and neighborhoods.

These general guidelines, delineated below are based on the potential mature size and horticultural needs of the tree in relation to generalized site conditions. Specific sites will dictate the preferred tree and spacing, consult with city staff or for more information.

The preference for street tree location is in areas where suitable soil volumes exist to grow large, functional street trees. In no event shall a new street tree be planted in the right-of-way tree lawn if the width of such tree lawn area is narrower than 3'. Root barriers are required for all street trees in planer strips less than 8' in width. The anticipated size of the tree will dictate the planting location; street tree design shall focus primarily upon planting trees in locations that will protect other right-of-way infrastructure while providing large, functional canopy area, where appropriate. All tree selection shall follow the concept of 'right-tree, right-place'; the largest tree should be used for the rooting and overhead space available to improve overall canopy coverage throughout the city.

Street Tree Installation Chart:

Criteria	Group I Small Trees	Group III Narrow Trees	Group III Medium Trees	Group V Boulevard Trees
Minimum planter strip width	3.5'	4'+	5'+	6.5'+
On-center spacing standards	18 - 25 ft	25 ft	25 - 35 ft	35 - 50 ft
Plant under overhead utility lines?	Yes	No	No	No
Planting distance from buildings	5 - 10 ft	5 - 10 ft	12.5 - 15 ft	15-20 ft
Distance from utility poles, driveways, alleys, hydrants	10 ft	10 ft	15 ft	15 ft
Distance from underground utilities	5 ft	5 ft	5 ft	7.5 ft
Minimum distance from intersection (Appendix 20.7)	30 ft	30 ft	30 ft	30 ft
Minimum distances from street signs (excluding parking signs)	50' from leading side, 25' from rear side	50' from leading side, 25' from rear side	50' from leading side, 25' from rear side	50' from leading side, 25' from rear side

12.5 Tree Selection

The selection of tree species for a particular location should consider the horticultural, aesthetic and urban design requirements in equal measure.

A. Street tree selection shall come from the approved listings in sections 12.7 - 12.10, unless otherwise approved by the Parks Maintenance Division and/or Planning Director/designee(s).

12.6 Street Tree Mix

A mixture of street tree species and genera shall be provided throughout site-specific developments to provide visual interest and to ensure that a mixture of tree species are used throughout the city, as follows:

- For projects involving one (1) to three (3) trees, one (1) species may be used.
- For projects involving four (4) to eight (8) trees, at least two different species and/or cultivars of trees shall be included. Trees in this category can be of the same genus but shall be of differing cultivars.
- For projects involving nine (9) to fifteen (15) trees, at least three (3) different trees (all of differing genus) shall be used.
- For projects involving sixteen (16) or more street trees, at least four (4) different trees (all of differing genus) shall be used. A minimum of 25 percent of these trees shall be evergreen conifers.

To prevent uniform disease susceptibility and eventual uniform senescence, no single species or cultivar shall make up more than 10 percent of the total City street tree population; no more than 20 percent of the total City street tree population shall be composed of one genus and no more than 30 percent of any one family. The Director may limit or adjust the required species mix on a given site, project, or area of the city if the proposed species presently or with the addition of the proposed trees would constitute over 15 percent of the total city-wide street tree species mix. A periodic inventory of street trees shall be maintained by the Development Services Department. Species may also be limited or adjusted due to horticultural constraints including disease or potential pest problems.

12.7 Group I Overhead Utility Street Trees

These trees are shorter and may be spaced as close as 18 feet but more commonly will be spaced 20 to 25 feet apart. The minimum planting tree lawn width for each of these trees is 3.5'-4'. Care should be taken to select trees with an upright form for any planter strip less than 4'; root barriers are always required for trees in planter strips less than 8' in width. Each tree selected in this category is appropriate for planting under overhead utility lines.

Common name (<i>Botanical</i>)	Size (H X W)	Under overhead wires?	Minimum tree lawn width	Comments
Amur Maple (<i>Acer ginnala</i>)	20' X 20'	Yes	4'	Multi-stem tree

Goldenraintree (<i>Koelreuteria paniculata</i>)	30' X 25'	Yes	4'	
Kousa Dogwood (<i>Cornus kousa</i>)	25' X 25'	Yes	4'	Showy flowers in spring
Paperbark maple (<i>Acer griseum</i>)	25' X 20'	Yes	4'	Interesting cinnamon colored peeling bark
Serviceberry (<i>Amelanchier alnifolia</i>)	20' X 15'	Yes	3.5'	Cultivars 'Princess Diana' and 'Autumn Brilliance' approved
Flowering Crabapple (<i>Malus</i> Sp.)	Varies	Yes (generally)	3.5'	Usually a rounded growth habit, check species/cultivar
Royal Raindrops Crabapple (<i>Malus 'Royal Raindrops'</i>)	20' X 15'	Yes	3.5'	Deep purple leaf color, preferred cultivar for upright habit
Ivory Silk Lilac tree (<i>Syringa reticulata 'Ivory Silk'</i>)	20' X 15'	Yes	4'	Showy flowering
Star Magnolia (<i>Magnolia stellata</i>)	20' X 15'	Yes	3.5'	Spreading, multi-branched, almost shrub-like; Note: other Magnolia permitted as small tree if under 30' at maturity
Eastern Redbud (<i>Cercis canadensis</i>)	25' X 25'	Yes	4'	Spreading, rounded crown shape; other <i>Cercis</i> cultivars allowed
Carriere Hawthorn (<i>Crataegus x lavalleyi 'Carrierei'</i>)	20' X 15'	Yes	3.5'	Small orange fruit can attract wildlife
Thornless Cockspur Hawthorn (<i>C. crus-galli</i>)	25' X 25'	Yes	4'	Thornless cultivar
Japanese Snowbell (<i>Styrax Japonicus</i>)	25' X 25'	Yes	4'	Showy flowers, prefers partial shade
Persian ironwood (<i>Parrotia persica 'Vanessa'</i>)	28' X 15'	Yes	4'	2013 Tree of the year. Upright form, drought tolerant
Mountain Hemlock (<i>Tsuga mertensiana</i>)	30' X 15'	Yes	4'	EVERGREEN - Low growing at lower elevations, pyramidal
Korean fir (<i>Abies koreana</i>)	30' X 15'	Yes	4'	EVERGREEN – interesting purple, upright cones, native to South Korea
Shore Pine (<i>Pinus contorta</i>)	30' X 25'	Yes	5'	EVERGREEN – Native conifer, responds well to directional pruning
Vanderwolf Limber Pine (<i>Pinus flexilis 'Vanderwolf's Pyramid'</i>)	25' X 15'	Yes	4'	EVERGREEN – Beautiful pine, pyramidal

Baby Blue Eyes Spruce (<i>Picea pungens</i> 'Baby Blueeyes')	30' X 15'	Yes	4'	EVERGREEN – Dwarf of Colorado blue spruce
Skyward bald cypress (<i>Taxodium distichum</i> 'Skyward')	20' X 10'	Yes	4'	Deciduous conifer – dwarf bald cypress, narrow species
Zelkova – 'City Sprite', 'Wireless' (Zelkova serrate 'City Sprite', 'Schmidtlow')	25' X 20' (City sprite) 25' X 35' (Wireless)	Yes	5'	Wireless zelkova should only be used in wide settings, both tough, upright trees
Amur Maackia (<i>Maackia amurensis</i>)	25' X 20'	Yes	4'	Upright vase shaped
Slender Hinoki False Cypress (<i>Chamaecyparis obtusa</i> 'Gracilis')	15' X 10'	Yes	4'	EVERGREEN -Pendulous branches and growth, very small at maturity
Summer Sprite Linden (<i>Tilia cordata</i> 'Halka')	20' X 15'	Yes	4'	

12.8 Group II Narrow Street Trees

These trees may be used for narrow areas but they still require adequate root area. The spacing will vary with the intent but may be as close as 12 to 15 feet, but 20 foot spacing will be more common. There are some tall trees included in this list, so check to make sure the site can handle the specific species or cultivar.

Common name (<i>Botanical</i>)	Size (H X W)	Under overhead wires?	Minimum tree lawn width	Comments
Pyramidal European Hornbeam (<i>Carpinus betulus pyramidalis</i>)	35' X 25'	NO	5'	Tough urban tree, good near hard surfaces
Tulip Poplar (<i>Liriodendron tulipifera</i>)	60' X 20'	NO	6'	Interesting leaf shape, can have annual aphid problems
Upright English Oak (<i>Quercus robur</i> 'Fastigiata')	60' X 25'	NO	6'	Narrow, upright form
Boulevard/Continental Appeal Linden (<i>Tilia americana</i> 'Boulevard'/'Continental appeal')	50' X 25'	NO	5'	Very hardy, large leaf area
'Shawnee Brave' Bald Cypress (<i>Taxodium distichum</i> 'Shawnee Brave')	60' X 10'	NO	8'	Tolerant wet soil (swamp native), deciduous conifer
Green Pilar Pin Oak (<i>Quercus palustris</i>)	45' X 15'	NO	5'	Very columnar cultivar of Pin Oak

'Pringreen' or 'Green Pillar')				
'Purple Dawyck' Beech (<i>Fagus sylvatica</i> 'Dawyckii Purple')	80' X 15'	NO	5'	Good alternative to thundercloud plum
'Crimson Spire' Oak (<i>Quercus robur</i> x <i>Q. alba</i> 'Crimschmidt')	45' X 15'	NO	5'	Rust red fall color, fastigate in growth; also try other <i>Robur</i> selections: 'Regal prince', 'Streetspire' or 'Skyrocket'
Prarie Sentinel Hackberry (<i>Celtis</i> 'JFS-KSU1')	45' X 12'	NO	5'	Extremely tight, narrow form
Incense cedar (<i>Calocedrus decurrens</i>)	50' X 15'	NO	6.5'	EVERGREEN – Narrow, columnar evergreen, should be used often
Alaskan Yellow Cedar (<i>Chamaecyparis nootkatensis</i>)	45' X 15'	NO	6.5'	EVERGREEN -Beautiful accent tree, should be used in alternating plantings not as a stand alone row; 'Pendula' also accepted
Mushashino Zelkova (<i>Zelkova serrata</i> 'Musashino')	45' X 15'	NO	5'	Very narrow, tightly upright form
Ginko 'Fastigiata' (<i>Ginkgo biloba</i> "Fastigiata")	50' X 15'	NO	6'	Brilliant yellow fall color, distinctive leaf shape, also try 'Princeton Sentry'
Honeylocust 'Streetkeeper' (<i>Gleditsia triacanthos</i> 'Draves')	45' X 20'	NO	6'	Columnar form
Norway Maple (<i>Acer platanoides</i> 'Emerald Queen')	50' X 40'	NO	6'	Fast growing maple

12.9 Group III Medium Street Trees

These trees are of medium size, 30 - 60 feet and should be used with some thought to early structural pruning to develop an attractive and safe branching pattern. The tree lawn should be at least 5 feet and preferably 6 feet wide. The spacing of the trees should be 30 to 40 feet apart.

Common name (<i>Botanical</i>)	Size (H X W)	Under overhead wires?	Minimum tree lawn width	Comments
Black Tupelo (<i>Nyssa sylvatica</i>)	60' X 30'	NO	6'	Chunky bark, adaptable to wet, clay-ish soils
Autumn gold Ginko (<i>Ginkgo biloba</i> 'Autumn Gold')	45' X 35'	NO	6'	Brilliant fall yellow color
Honeylocust (<i>Gleditsia triacanthos</i>)	45' X 35'	NO	6'	Many cultivars available

Little Leaf Linden (<i>Tilia cordata</i> 'Greenspire', 'Harvest Gold')	50' X 30'	NO	5'	Symmetrical shape, pavement 'friendly'; 'Harvest Gold' has great fall color
Lacebark elm (<i>Ulmus parvifolia</i>) – all cultivars	40-50' X 35'	NO	5'	Resistant to Dutch Elm Disease; 'Allee Elm' preferred, all cultivars and hybrids of <i>Ulmus parvifolia</i> acceptable
Zelkova 'Village Green' (<i>Zelkova serrata</i> 'Village Green')	50' X 40'	NO	6'	Vase shaped, tight branch angles; good elm substitute; also try 'Green Vase', 'Halka'
American Hop Hornbeam(<i>Ostrya virginiana</i>)	45' X 25'	NO	5'	Hop-like flowers
Linden/Basswood (<i>Tilia Americana</i> , <i>Tilia hybrids</i>)	Varies	NO	6'	All cultivars, hybrids of <i>Tilia</i> promoted; good sub for ash trees, tolerant to urban conditions
Elm hybrids – 'Emer 1', 'Morton stalwart', 'Emerald Sunshine', 'Frontier', 'Homestead', 'New Horizon', 'Patriot', 'Pioneer' 'Prospector', 'Triumph'	Varies	NO	5-6'	Use of all <i>Ulmus</i> hybrids here acceptable, all have resistance to Dutch Elm Disease and phloem necrosis. Mature heights and widths vary
Hackberry (<i>Celtis occidentalis</i>)	50' X 35'	NO	6'	Tolerant to urban conditions, should be used more often
Katsura tree (<i>Cercidiphyllum japonicum</i>)	45' X 45'	NO	5'	Beautiful leaf shape, attractive form
Baumann horsechestnut (<i>Aesculus hippocastanum</i> 'Baumannii')	40' X 40'	NO	6'	Seedless variety, showy flowers; examine other seedless varieties
Hedge maple (<i>Acer campestre</i> 'Evelyn')	35' X 35'	NO	5'	Cultivar ;Evelyn' has a strong upright form – this cultivar only authorized for use
Sycamore maple (<i>Acer pseudoplatanus</i>)	50' X 30'	NO	6'	Purple leaf cultivar 'atropurpureum' accepted for use
Turkish filbert (<i>Corylus colurna</i>)	40' X 25'	NO	5'	Tight, formal crown, strong leader. Should not be used near sidewalks due to nut production
Sourwood (<i>Oxydendrum arboretum</i>)	30' X 15'	NO	5'	Brilliant fall red color, good sub for red maple

Macho Cork Tree (<i>Phellodendron amurense</i> 'Macho')	40' X 40'	NO	5'	Fruitless variety, handsome chunky bark; cultivars 'His Majesty' and 'Longenecker' also
Hinoki Cypress (<i>Chamaecyparis obtusa</i>)	50' X 15'	NO	6.5'	EVERGREEN
Serbian Spruce (<i>Picea omorika</i>)	50' X 20'	NO	6.5'	EVERGREEN – Nice, narrow evergreen tree
Oriental spruce (<i>Picea orientalis</i>)	50' X 25'	NO	6.5'	EVERGREEN – Fine needles, golden cultivars have great gold color

12.10 Group IV Boulevard Street Trees

These large trees should only be used in large planting areas. Due to their large canopy and or extensive root system the tree lawn should be at a minimum of 6.5' feet and preferably 8-10 feet wide. There should be a minimum spacing of 30 to 50 feet between trees.

Common name (<i>Botanical</i>)	Size (H X W)	Under overhead wires?	Minimum tree lawn width	Comments
Sawtooth oak (<i>Quercus acutissima</i>)	60' X 40'	NO	6'	Dark green, glossy foliage
Swamp white oak (<i>Quercus bicolor</i>)	60' X 45'	NO	6'	All cultivars of <i>Quercus bicolor</i> promoted
Scarlet Oak (<i>Quercus coccinea</i>)	60' X 45'	NO	6'	Large tree, leaf similar to red oak
Red Oak (<i>Quercus rubra</i>)	60' X 45'	NO	6'	Good street tree
Oregon white oak (<i>Quercus garryana</i>)	60' X 40'	NO	6'	Only oak native to NW; should be used only in well-draining, rocky soils
English oak (<i>Quercus robur</i>)	60' X 40'	NO	5'	Sturdy tree
Blackjack oak (<i>Quercus marilandica</i>)	50' X 30'	NO	6'	Interesting club-shaped leaf
Bur oak (<i>Quercus macrocarpa</i>)	55' X 45'	NO	6'	Broad, irregular growth
Pin oak (<i>Quercus palustris</i>)	55' X 40'	NO	6'	Branches have a distinctive droop overtime
American Elm (<i>Ulmus americana</i> – 'Valley Forge', 'Princeton', 'New Harmony', 'Jefferson')	Varies – 70' X 65' common	NO	6.5'+	NOTE: only Dutch Elm Disease resistant cultivars allowed; stately, arching branches, a classic American street tree
Planetree/Sycamore (<i>Platanus x acerifolia</i> – 'Bloodgood' or 'Yarwood')	50' X 40'	NO	6.5'+	Strong, large tree with maple-like leaves. Tolerant urban conditions. Should be used in large planter strips in excess of 6.5'

Western red cedar (<i>Thuja plicata</i>)	100'+ X 35'	NO	6.5'+	EVERGREEN –Great native evergreen, tolerates wet, shady conditions
Giant sequoia (<i>Sequoiadendron giganteum</i>)	100'+ X 45'	NO	8'+	EVERGREEN – Huge evergreen, strongly pyramidal growth
Douglas fir (<i>Pseudotsuga menziesii</i>)	100'+ X 35'	NO	8'+	EVERGREEN – Most common native evergreen, large tree
Western white pine (<i>Pinus monticola</i>)	100'+ X 35'	NO	8'+	EVERGREEN – lighter color needles
Tulip tree (<i>Liriodendron tulipifera</i>)	60' X 35'	NO	6'+	Fast growing, yellow fall color
Kentucky coffeetree (<i>Gymnocladus dioica</i> – 'Espresso')	60' X 35'	NO	6'	Large, bi-pinnately leaves; seed pods can create issues in high traffic areas
European beech (<i>Fagus sylvatica</i> 'Riversii', 'Roseomarginata', 'Asplenifolia')	60' X 45'	NO	6'	Beautiful, long-lived trees, 'Riversii' – purple leaf, tri-color should be used often and for contrast
Silver linden (<i>Tilia tomentosa</i>)	70' X 40'	NO	6'	Fragrant yellow flowers in summer, silvery lower leaves contrast with dark green upper
Dawn redwood (<i>Metasequoia glyptostroboides</i>)	70' X 30'	NO	6'	Fast growing deciduous conifer tree, tolerates many conditions
Atlas cedar (<i>Cedrus atlantica</i>)	60' X 40'	NO	8'	EVERGREEN – Stately tree, very broad over time
Deodar cedar (<i>Cedrus deodara</i>)	70' X 40'	NO	8'	EVERGREEN – Excellent evergreen, pendulous branches and form
Ponderosa pine (<i>Pinus ponderosa</i>)	100'+ X 35'	NO	8'+	EVERGREEN – native to eastern side of state, nice chunky bark
Sugar Maple (<i>Acer saccharum</i> – 'Bonfire', 'Commemoration', 'Legacy')	50' X 40'	NO	6'	Great fall color with all Sugar maples, should be used along side contrasting evergreens
Grand fir (<i>Abies grandis</i>)	65' X 20'	NO	8'	EVERGREEN - PNW native, prefers dry sites
Bald cypress (<i>Taxodium distichum</i>)	70' X 25'	NO	8'	Deciduous conifer, tolerates wet conditions well

12.11 Group V Prohibited Trees

These trees shall not be used for street tree plantings due to overuse, aggressive root system, weak branching habit, disease or pest susceptibility or other problems that are compounded when planted near the street and sidewalk. Many of these trees are useful in other planting situations.

- Red Maple (*Acer rubrum*, *Acer x freemanii*) – *Acer rubrum* and all cultivars of this species are currently not allowed due to vast over-use throughout the city. This exclusion includes *Acer x freemanii* and all cultivars of the *freemanii* hybrid as well.
- Ash (*Fraxinus spp.*) – *Fraxinus* and all cultivars shall not be used due to the spreading risk of emerald ash borer (EAB), which kills all *Fraxinus* trees. No EAB resistant cultivars are known.
- Flowering Pear (*Pyrus calleryana*) – Similar to *Acer rubrum*, flowering pear trees are prohibited currently due to overuse and due to susceptibility to storm damage and short life span.
- Thundercloud Plum (*Prunus cerasifera* ‘Thundercloud’) – This specific cultivar is prohibited due to vast overuse as well as susceptibility to storm damage and pruning induced water sprout production, even when conducting routine light pruning.
- Sweetgum (*Liquidambar Sp.*) – Sweetgum has been traditionally overused, does not stand up well generally to storms/wind and commonly lift and break sidewalks.
- Big Leaf Maple (*Acer macrophyllum*) – Useful in many other native areas throughout the city
- Silver Maple (*Acer saccharinum*) – This maple species is prone to extensive decay and branch breakages as well as a shallow, aggressive root system.
- Red Alder (*Alnus rubra*) - Useful in many other native areas throughout the city
- *Populus spp.* – prohibition includes all trees in the *Populus* genus, including poplars, cottonwoods, aspens, etc.
- *Salix spp.* – (willows)
- Tree of Heaven (*Ailanthus altissima*)