

Street Tree Considerations Checksheet

Title 11 requires the preservation of street trees in recognition of the important public health benefits that trees provide. This Street Tree Considerations Checksheet is a tool for assessing the preservation requirement and relative value of street trees, along with potential development alternatives that may allow for tree retention. **This checksheet is not a permit application, nor is it the final decision on street tree preservation or development approval.** The purpose of the checksheet is to assist in identifying street trees that are a priority to preserve, and then to consider a range of construction alternatives that may allow for preservation.

Step 1 of the checksheet is to identify street trees that are subject to preservation. While recommended, Step 1 is not required to be completed by a certified arborist¹. The checksheet is intended to be completed for one tree at a time.

Step 2 is to identify the relative preservation values of street trees, and is required to be completed by an Arborist.

Step 3 is to identify potential construction and development alternatives that may allow for the preservation of street trees. Step 3 is required to be completed by an Arborist in coordination with other development team members with expertise in engineering, construction, planning, architecture, and right-of-way design.

Appendix 1 provides additional description for the various checksheet fields.

I affirm that the information I have provided here is true and accurate to the best of my knowledge.

Signature of Arborist or Urban Forestry staff

Date

Print name

¹ The term Arborist has a meaning as provided in Portland City Code 11.80: "Arborist" means a professional listed as a certified arborist by the International Society of Arboriculture or a consulting arborist registered with the American Society of Consulting Arborists.

Street Tree Considerations Checklist

Site Location: _____

Tree Species: _____

Arborist Name/Phone Number/Email: _____

Step 1: Initial Street Tree Assessment¹

- 1. Less than 3-inch DBH: yes no unsure
- 2. Dead, dying, or dangerous (see [Chapter 11.80.020.B.36](#)): yes no unsure
- 3. Nuisance species (see [Nuisance Tree List](#)): yes no unsure
- 4. Approved for removal under a land use decision: yes no unsure

¹Trees that receive a yes on any of items 1 through 4 will be exempt from preservation following verification by the City Forester. Trees that receive a no on items 1 through 4 will proceed to Step 2.

Step 2: Advanced Street Tree Assessment²

1. Site Considerations:

- Mature tree size is maximized given the available growing space: yes no unsure
- Adequate spacing from adjacent trees: yes no unsure
- Unlikely to cause infrastructure damage (sidewalk, curbs, etc.): yes no unsure
- Adequate soil volume for growth to maturity: yes no unsure

2. Species Considerations:

- High value species (long lived, native, rare, evergreen, etc.): yes no unsure
- Tolerant of urban conditions (excess heat, pollution, soils, etc.): yes no unsure
- Low susceptibility to untreatable pests or diseases: yes no unsure

3. Condition Considerations:

- Tree is in good health condition: yes no unsure
- Tree lacks significant structural defects or damage: yes no unsure
- Tree age: new young mature overmature

4. Benefit Considerations:

- Locational benefits such as: yes no unsure
 - Shades south or west sides of buildings;
 - Within stormwater management facility;
 - Prevents erosions on steep slopes or unstable soils;
 - Screens objectional views;
 - Enhances neighborhood character or historic resources;
 - Part of native tree grove; and/or
 - Other. _____

5. Provide an opinion of the tree's relative value based on the site, species, condition, and benefits considerations (provide reasoning in space below or attach report):

Low: Medium: High:

Comments/Notes:

²Step 2 to be completed by an Arborist.

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Step 3: Construction Methods Analysis^{3,4}

Development Construction Methods (for both public and onsite improvements such as sidewalks, buildings, driveways, and utilities):

Can...

- | | | | |
|---|------------------------------|-----------------------------|---------------------------------|
| 1. ...utilities avoid trees through placement or boring: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 2. ...driveways avoid trees through placement or consolidation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 3. ...sidewalks avoid trees through placement: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 4. ...existing sidewalk/curb be retained to allow for preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 5. ...alternative sidewalk materials allow for preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 6. ...curbs be bumped out to allow for preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 7. ...stormwater facility placement allow for preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 8. ...building footprints shift to accommodate trees: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 9. ...root/crown pruning or other methods allow for preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 10. ...excavation be minimized to preserve trees such as: | | | |
| • Alternative foundations such as pier foundation w/ grade beam: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| • Shoring to avoid soil layback when trenching: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| • Soldier pile walls to avoid layback for basements or parking: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| • “No dig” curb/pavement built up from existing grade: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| • Other: _____ | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 11. ...construction staging and access allow for preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 12. ...project absorb costs associated with preservation: | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |
| 13. Other: _____ | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> unsure |

Comments/Notes:

³ Options for tree preservation and/or provision of planting space must comply with standards for other right-of-way elements.

⁴ Step 3 to be completed by an Arborist in coordination with design team. Leave fields blank if not applicable. If answer is no for an alternative, explain in space above or attach report.

Conclusions/Recommendations:

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Appendix 1: Additional Description of Checklist Fields

Step 1: Initial Street Tree Assessment

1. Less than 3-inch DBH: *Trees that are less than 3-inch DBH are exempt from preservation. Section 11.80.020.C.3.b of the Portland Code describes how to measure the DBH of existing trees.*
2. Dead, dying, or dangerous: *Dead, dying, or dangerous trees are exempt from preservation. Section 11.80.020.B.36 defines dead, dying, and dangerous trees. An Arborist may be required to determine whether a tree fits the definition.*
3. Nuisance species: *Nuisance tree species are exempt from preservation. The nuisance tree list is at this link < <https://www.portland.gov/trees/tree-planting/native-and-nuisance-trees/nuisance-tree-list>>*
4. Approved for removal under a land use decision: *Street trees that were approved for removal by a Title 33 land use decision, such as a land division, are exempt from preservation. In addition, street trees that must be removed to comply with Title 33 requirements, such as maximum front setbacks, are exempt from preservation. An Arborist may be required to determine whether a tree must be removed to comply with Title 33.*

Step 2: Advanced Street Tree Assessment

1. Site Considerations:

- Mature tree size is maximized given the available growing space: *The City's approved street tree planting lists have varying tree species for varying planting space widths based on the tree size at maturity. Mature tree size is maximized when the species is approved for the width of the planting space. Mature tree size is not maximized if, for example, a small stature tree is planted in a large planting space without power lines. This is a link to the approved lists < <https://www.portland.gov/trees/tree-planting/street-tree-planting-lists>>*
- Adequate spacing from adjacent trees: *Typical required street tree spacing is 25 feet on center.*
- Unlikely to cause infrastructure damage (sidewalk, curbs, etc.): *The likelihood of infrastructure damage is based on a combination of the tree size at maturity, species root structure, soil characteristics, proximity of pavement, mitigating factors such as root barriers and pavement conditions, and other factors deemed relevant by the arborist.*
- Adequate soil volume for growth to maturity: *Research indicates trees need 1 to 2 cubic feet of soil volume per square foot of crown projection. Typical soil depth is assumed to be 3 feet unless a greater or lesser depth of topsoil is found at a site. Cubic feet of soil volume may be calculated by measuring the area of a planting space (length x width, in feet) and then multiplying by a 3 foot depth. The volume of soil may then be compared to the square feet of mature crown projection of a street tree to determine whether the soil volume is adequate to support growth to maturity.*

2. Species Considerations:

- High value species (long lived, native, rare, evergreen, etc.): *This is a qualitative opinion by the arborist based on experience but factors in longevity, native species, rarity, stormwater benefits such as those provided by evergreen trees, and other factors deemed relevant by the arborist.*
- Tolerant of urban conditions (excess heat, pollution, soils, etc.): *Certain tree species are more tolerant of urban conditions such as excess heat and light, air, water, and soil pollution, compacted, contaminated, or low fertility soils, and other stressors.*
- Low susceptibility to untreatable pests or diseases: *Certain tree species and varieties have a lower susceptibility to untreatable pests and diseases including insects, fungi, bacteria, and viruses.*

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3. Condition Considerations:

- Tree is in good health condition: *This is based on a relative range of conditions from good, fair, poor, to very poor/dead.*
- Tree lacks significant structural defects or damage: *Structural defects or damage increase the likelihood of tree failure and may include root plate lifting, decayed roots, trunks, or branches, poor trunk taper, weak branch attachments with included bark, past topping cuts, and other defects or damage.*
- Tree age: *Tree age categories include: new, young, mature, and overmature. New trees are those that were recently planted. Young trees are those still experiencing rapid growth in size. Mature trees are those that have reached their mature size and are no longer experiencing rapid growth. Overmature trees are those that have reached the end of their useful life and have begun to significantly decline.*

4. Benefit Considerations: *Benefit considerations reflect the equitable distribution of the environmental, aesthetic, cultural, and historic benefits provided by trees. The following benefits are included in the checklist, but the arborist may add other benefits in space provided that are not listed, such as the presence of a tree in a low-canopy neighborhood.*

- Shades south or west sides of buildings (*Energy savings*)
- Within stormwater management facility (*Water quality/quantity*)
- Prevents erosions on steep slopes or unstable soils (*Erosion control*)
- Screens objectional views (*Aesthetic benefits*)
- Enhances neighborhood character or historic resources (*Cultural and historic benefits*)
- Part of native tree grove (*Environmental/habitat benefits*)

Step 3: Construction Methods Analysis

Development Alternatives:

1. Can utilities avoid trees through placement or boring: *Can utilities be placed under the street where there may be fewer tree roots? Can utility laterals be placed under driveways so impacts are consolidated in one location? Can utilities be bored underneath the tree root systems?*
2. Can driveways avoid trees through placement or consolidation: *Can driveway locations shift to avoid street trees? Can one driveway serve multiple lots or units so street tree impacts are minimized? Can the driveway width be reduced to preserve street trees?*
3. Can sidewalks avoid trees through placement: *Can the sidewalk meander away from street trees? Can the elevation of the sidewalk be increased to avoid excavation in the root zones? Can the sidewalk be placed in an easement on private property to avoid the street trees? Can sidewalk width be reduced to avoid root impacts?*
4. Can existing sidewalk/curb be retained to allow for preservation: *Does the existing sidewalk need to be replaced, or can it adequately serve the new development if it means preserving a street tree? Does the existing curb need to be replaced, or can it be retained if it means preserving a street tree? Can certain sections of the curb and/or sidewalk be retained if it means preserving a street tree?*
5. Can alternative sidewalk materials allow for preservation: *Consider alternative materials such as asphalt, rubber, pavers, decomposed granite, concrete with rebar, thickened concrete, pervious concrete, and other accessible materials that may allow for the preservation of existing street trees. Requires a design exception from PBOT Permit Engineering (for development projects) or the PBOT project engineer (for a capital project) to ensure the alternate sidewalk material is on PBOT's qualified product list and can provide for an ADA compliant walkable surface.*
6. Can curb bump out to allow for preservation: *Consider whether the curblines can be bumped out to preserve an existing street tree. Among the factors to consider include loss of onstreet parking and whether there is an existing or planned bike lane that would be impacted.*
7. Can stormwater facility placement allow for preservation: *Are there alternative locations, sizes, or configurations for stormwater facilities that will allow for the preservation of street trees?*

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8. Can building footprints shift to accommodate trees: *Can the building be setback further from the property line or can the building footprint or façade be shifted or adjusted to preserve the root system or crown of an existing street tree?*
9. Can root/crown pruning or other methods allow for preservation: *Consider the percent of the live crown or root system that could be pruned while maintaining the health and/or structural stability of existing street trees. Also consider the diameter of branches and roots that are cut and their proximity to the trunk. Alternatives to branch and root removal such as temporary tieback of branches for construction clearance, or shaving portions of roots may allow for preservation while accommodating construction. Any pruning, tiebacks, or root shaving of street trees must be approved by Urban Forestry.*
10. Can excavation be minimized to preserve trees such as:
 - Alternative foundations such as pier foundation w/ grade beam: *When buildings or other structures are constructed near street trees, consider alternative foundations to preserve tree roots. Options include discontinuous footings (piers) with beams that are specified to be above grade. Also, structures can be cantilevered over a root system with the building extending from the foundation. Other custom foundations may be designed in collaboration with an engineer to preserve tree roots. Consider the elevation of the building, required crawl spaces, the number, size, and spacing of piers, and potential soil compaction from equipment when specifying alternative foundations for root preservation.*
 - Shoring to avoid soil layback when trenching: *When trenching, state law requires safety measures to prevent cave-ins. For example, soil may be required to be laid back at a 1½:1 slope (for every foot of depth, the trench must be excavated back 1½ feet) depending on soil type. This can result in wide areas of excavation that may impact street tree roots. Shoring, such as the use of a trench box or shield approved by an engineer, can be used to avoid soil layback and minimize root impacts in some situations.*
 - Soldier pile walls to avoid layback for basements or parking: *In areas where there will be excavation for basements or underground parking, consider retaining wall systems such as soldier pile walls or soil nailing to avoid layback into street tree root systems.*
 - “No dig” curb/pavement built up from existing grade: *When paving over tree roots is unavoidable, consider a “no dig” pavement that is elevated above existing grade to minimize root impacts. Permeable base rock without fine materials should be considered as well as pavement design that allows for air and water exchange to tree roots. Also, minimize the depth of fill by using strategies such as reinforced concrete or thinner base rock sections if approved by the project engineer.*
11. Can construction staging and access allow for preservation: *Consider where staging of construction will occur and the location of access routes. Design staging and access routes that avoid street trees and their root systems.*
12. Can project absorb costs associated with preservation: *Analyze whether measures to preserve trees will significantly increase project costs to the point where the projects may not be economically feasible. Consider cost saving measures from tree preservation in addition to cost increases. For example, preserving trees saves costs associated with tree removal, disposal, mitigation, and permitting. Trees are also proven to increase sales prices and rental income. Some options such as directional boring may save costs associated with trenching, soil stockpiling, arborist oversight, and root pruning. If increased project costs are a reason for street tree removal, an economic analysis may be required to document the potential costs of tree preservation in relation to the overall project costs.*