

# Tree Credits



## Stormwater Management Goals Achieved

## Acceptable Sizing Methodologies

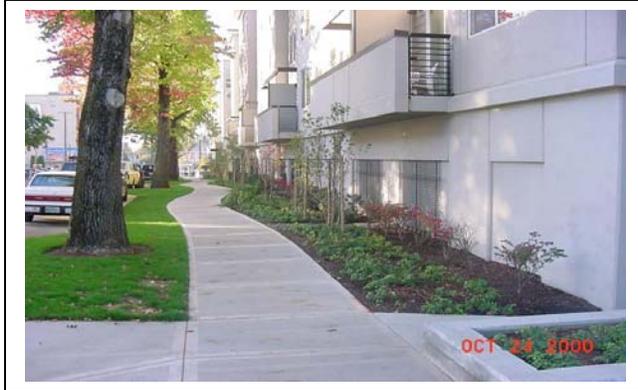
- √ Impervious Area Reduction..... SIM
- √ Pollution Reduction..... SIM
- √ Flow Control..... SIM
- Destination..... NA

This facility is **not** classified as an Underground Injection Control structure (UIC).

SIM=Simplified Approach, PRES= Presumptive Approach, PERF= Performance Approach

**Notes:** Tree Credit trees are impervious area reduction techniques. Trees intercept rainfall and provide shade for impervious surfaces. Trees may only receive credit against the construction of ground-level impervious surfaces. Trees planted to meet the planting requirements of the stormwater management facility, except those located in Contained Planters, may not also receive Impervious Area Reduction Technique credits on the Form SIM.

# Tree Credits



**Description:** Trees intercept precipitation and provide several stormwater management benefits:

**Flow control:** Trees hold water on the leaves and branches and allow it to evaporate, retaining flow and dissipating the energy of runoff. These functions are most measurable for storms of less than 0.5 inches over 24 hours. While deciduous trees are not as effective during winter months, evergreen trees are effective year round for these smaller storms and portions of larger storms. Generally, large trees with small leaves are the most efficient rainfall interceptors. Trees also facilitate stormwater infiltration and groundwater recharge.

**Pollution reduction/stormwater cooling:** Trees can provide shade over large areas of impervious surface. This provides two direct benefits. First, the hard surface is protected from direct solar exposure, which reduces heat gain. The less heat gain there is in pavement, the less heat is absorbed by stormwater as it flows over the surface. Second, by shading pavement, the trees help reduce or minimize air temperature increases caused by the hot pavement. Cooler air may help prevent stream temperature increases associated with air temperatures.

New large trees planted within 25 feet of ground-level impervious surfaces, and new small trees planted within 10 feet, are eligible for stormwater management credit. Tree credits may be applied to ground-level surfaces only; roofs may not receive tree credits. 100 square feet of credit is given for new deciduous trees, and 200 square feet of credit is given for new evergreen trees (See minimum sizes below). Stormwater management credits also apply to existing trees kept on a site if the trees' canopies are within 25 feet of ground-level impervious surfaces. The credit is the square-footage equal to one-half of the existing tree canopy within the 25 foot area. No more than 10% can be mitigated through the use of trees.

Trees used for stormwater management credit shall be clearly labeled on permit drawings.

# Tree Credits

## NEW EVERGREEN AND DECIDUOUS TREES:

Trees shall be maintained and protected on the site after construction and for the life of the development (50-100 years or until any approved redevelopment occurs in the future). During the life of the development, trees approved for stormwater credit shall not be removed without approval from the City. Trees that are removed or die shall be replaced within 6 months with like species. Trees shall be pruned in conformance with the Eugene Code 6.350, 7.280; Administrative Rules R 6.350, 7.280; Oregon Safety and Health Administration regulations, and the American National Standards Institute (A.N.S.I) Z133.1.300.

The trees selected shall be suitable species for the site conditions and the design intent. Trees should be relatively self-sustaining and long-lived. Native conifers are highly encouraged, as many of these trees naturally grow in harsh/rocky conditions. Temporary irrigation shall be provided for native plantings. Long-term irrigation is not required.

New deciduous trees must be at least 2 caliper inches and new evergreen trees must be at least 6 feet tall to receive simplified approach credit. Trees planted to meet stormwater management facility planting requirements, except those located in Contained Planters, may not also receive Impervious Area Reduction Technique credits on the Form SIM.

A permit or authorization is required from Urban Forestry to plant, prune, or remove right-of-way trees. Right-of-way trees shall be at least 1.5 caliper inches for residential and 2 caliper inches for collector and arterial streets or trees abutting commercially-zoned properties. For parks and other public areas, the tree standard is 1.5-2 caliper inches. Tree planting shall also be in compliance with land use and street tree requirements.

**Approved Trees:** The following tree and arborescent shrub\* species are approved outright for use as simplified approach tree credits. Other species may be given credit, as approved.

<i>Acer macrophyllum</i>	Big Leaf Maple
<i>Alnus rubra</i>	Red Alder
<i>Arbutus menziesii</i>	Madrone
<i>Castanopsis chrysophylla*</i>	Chinquapin
<i>Chamaecyparis lawsoniana</i>	Port Orford Cedar
<i>Cornus nuttallii</i>	Western Flowering Dogwood
<i>Fraxinus latifolia</i>	Oregon Ash
<i>Juniperus occidentalis*</i>	Western Juniper
<i>Libocedrus decurrens</i>	Incense Cedar
<i>Pinus contorta</i>	Lodgepole Pine
<i>Pinus monticola</i>	Western White Pine
<i>Pinus ponderosa</i>	Ponderosa Pine
<i>Pseudotsuga menziesii</i>	Douglas Fir
<i>Quercus chrysolepis*</i>	Canyon Live Oak
<i>Quercus garryana</i>	Oregon White Oak
<i>Rhamnus purshiana</i>	Cascara

# Tree Credits

*Sequoia sempervirens*

*Thuja plicata*

*Tsuga heterophylla*

*Umbellularia californica*

Coast Redwood

Western Red Cedar

Western Hemlock

California Laurel

**Existing Trees:** Mature evergreen and deciduous trees can have significant benefits in addition to stormwater management. They already provide habitat for urban wildlife, energy and cost conservation, aesthetics, visual screens, heritage value, windbreaks, and recreation.

The stormwater credit applies to existing trees of 4-inch caliper or larger. Large trees which receive credit must be planted within 25' of proposed or existing ground-level impervious surfaces; small trees must be planted within 10' of proposed or existing ground level impervious surfaces. Credit is based on one-half of the square footage of the tree canopy, measured within the drip-line.

Protection during construction shall be in the conformance with the City's tree preservation standards. The applicant will have to provide documentation required by the City to ensure the tree will remain healthy after construction and during the life of the project. During the life of the development, trees approved for stormwater credit shall not be removed without approval from the City. Stormwater management functions of any removed trees shall be replaced on the site with other trees or stormwater management approaches. Trees that die shall be replaced within 6 months. Trees shall be pruned in conformance with the Eugene Code 6.350, 7.280; Administrative Rules R 6.350, 7.280; Oregon Safety and Health Administration regulations, and the American National Standards Institute (A.N.S.I) Z133.1.300.

## **Checklist of minimal information to be shown on the permit drawings:**

1. Trees to be given stormwater management credit shall be clearly labeled as such, with the size and species included.
2. Approximate setbacks from property lines and structures shall be shown.
3. Temporary irrigation measures shall be shown, if applicable.
4. Form SIM must be submitted, clearly showing that less than 10% of the impervious area is being mitigated with tree credits.

**Inspection requirements and schedule:** The following table shall be used to determine which stormwater facility components require City inspection, and when the inspection shall be requested. Please note that, while not all facility components may require an inspection call, inspectors will inspect for all required components in the field.

Facility Component	Inspection Requirement
Plantings	Call for inspection

Operations and Maintenance requirements: See **Chapter 3.0**.