GREENWORKS FACILITIES

OPERATIONS & MAINTENANCE GUIDELINES FOR RESIDENTS

WHAT ARE GREENWORKS FACILITIES?

The City of Shoreline is installing rain gardens and other natural drainage facilities in the public right-of-way (ROW). These facilities are collectively referred to as Greenworks. This guide is intended to help residents understand how these work and how to care for them in the ROW along their property.

Rain gardens and bioswales work to retain or detain stormwater flow. This means that they catch the water, and let is soak into the ground below, or slow it down as it moves along its way. They help the landscape take on more of its natural function, cleaning the water and reducing pollution and erosion downhill.

WHERE ARE GREENWORKS FACILITIES?

The first Greenworks projects were recently constructed, and are located at 12th Ave NE near 171st; N 149th St and Linden Ave N; N 149th St and Evanston Avenue N; and Wallingford Ave N near 153rd. A similar project previously built in Shoreline is on 17th Avenue NE between 145th and 150th Streets.

17th Ave NE between 145th and 150th Streets bioretention cells, porous pavement

RAIN GARDENS & BIOSWALES

BASIC CARE

INSPECTIONS & CLEANING Inspect (look at) the Greenworks natural drainage facility at least monthly, and keep it free of debris so it can function properly. Water flow is critical to system function; trash or debris can inhibit or block flows through the system and clog soils.

WEEDING Weeds can be an aesthetic issue and may impact growth of selected stormwater-specific plantings. Check for and remove weeds from the facility at least twice a year. For additional weed control, consider adding mulch following weed removal.

MOWING Lawn areas in drainage systems should be mowed regularly at a 2-inch minimum height. The higher grass assists in filtering the water and minimizes weeds.

WATERING During the dry summer months, the plants in the Greenworks facility may need a little extra water. Plants are selected for drought tolerance and should eventually survive all but the hottest dry weather without irrigation. During dry spells, plan to give them water at least every week or two, especially in the first three summers.

PLANTS Plants will require basic maintenance, such as an annual pruning, as well as occasional extra care to trim any overly vigorous vegetation back from roads or walkways.

SOILS The soils are a key piece of the natural drainage system and critical to its function. The soil mix is designed to have enough porosity for good infiltration and nutrients for healthy plants. Avoid compacting the soils by walking or driving on them.

MULCH

WHY MULCH? Mulch provides plants with additional nutrients, helps keep moisture in the soil, and helps prevent weed growth.

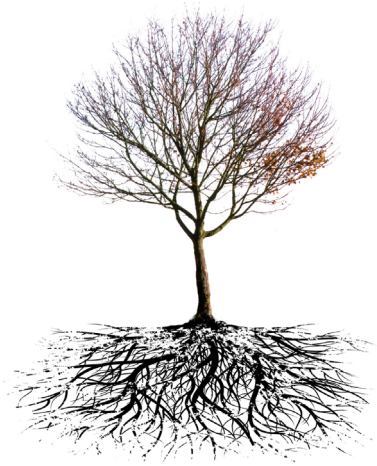
WOOD CHIP MULCH is used for planted areas that do not receive direct stormwater flows or ponding. **COMPOST MULCH** is made from coarse organic compost and is used around plants in natural drainage facilities.

CITY WILL APPLY MULCH approximately once a year. Residents may mulch more often as appropriate and following the City's guidelines.

compost mulch around rain garden plants

TREES

Trees are an important component of green infrastructure and the Greenworks facilities, and residents can help ensure their health with a few simple tasks.



INSPECTIONS CHECK TREES AT LEAST TWICE A YEAR

- **Plant stakes** - ensure that stakes/posts are secured to new trees. Ensure straps are secure but not too tight on trunk.
- **Damage** - check for tree damage from vehicles, storms, etc. Look for broken limbs, trunk scars, broken stakes. Prune, report major issues to City.
- **Pruning needs** - check for branches that are nearing roadway, power lines, or obscuring sight between roads, driveways, or walkways.

MAINTENANCE

- **Watering** - trees should be given extra water every week during the summer for first several years.
- **Mulch** - if adding mulch, place mulch to 3' from trunk, 1"-3" deep; avoid direct mulch contact with trunk.
- **Pruning** - generally in late winter, though check for information on individual species. Remove dead or diseased plant material, and prune to maintain appropriate sight lines for safety. Cut perpendicular to branch/stem; avoid tearing bark, don't leave a stub. DO NOT PRUNE NEAR POWER LINES.
- **Mature trees** - protect the root zone (below any branches) of mature trees from digging or heavy traffic.

FERTILIZERS/PESTICIDES

- **DO NOT USE chemical fertilizers or pesticides** in Greenworks facilities. Use of organic compost mulch or compost teas can help prevent pests and diseases. Contact the City for best options.

WEEDS

- Remove weeds (especially weedy trees such as birch, cottonwood, holly), as they can create visibility and other safety issues.

MAINTENANCE SCHEDULE OVERVIEW

When	Tasks
Monthly	• Inspect facility for debris
Late winter	• Prune trees, large shrubs • Mulch trees & shrub beds
Spring / early summer	• Weed facility (at least twice a year)
Weekly in summer	• Water plants during hot/ dry spells, especially trees

GOOD PLANTS

Snowberry *Symphoricarpos albus*
- native deciduous shrub, white berries (not edible) in fall/winter

Low Oregon grape *Mahonia nervosa*
- native evergreen shrub, waxy leaves with small points, dark blue berries

Slough sedge *Carex obnupta*
- native evergreen sedge, 2-4 feet tall bunches of upright stems

Dwarf redtwig dogwood *Cornus sericea 'Kelseyii'*
- small deciduous shrub, red stems

WEEDS

Morning glory *Convulvulus arvensis*
- aka field bindweed, a creeping vine with white flowers, can smother other plants

Himalayan blackberry *Rubus armeniacus*
- invasive thorny vine; aggressive grower, smothers other plants

Knotweed *Polygonum cuspidatum*
- non-native & invasive, fast grower; central stalk, 4-inch+ leaves; poisonous

English ivy *Hedera helix*
- invasive evergreen vine, glossy green leaves, climbs and covers other plants


sediment buildup at curb cut


soil compaction near driveway


improper pruning - damaged bark

TROUBLESHOOTING & SOLUTIONS

WATER PONDS AT CURB CUTS/INLETS

- Inspect site. Remove sediment, check whether vegetation or lawn has built up and remove or thin/lower to permit flow into rain garden or swale.

POROUS PAVEMENTS ARE CLOGGED

- Sweep to clear loose debris. Vacuum sweep or pressure wash to remove sediment/weeds in pore spaces. Contact City if more maintenance needed.

RAIN GARDEN IS NOT DRAINING WITHIN 72 HOURS

- Remove and replace the top layer of mulch (leave bioretention plantings in place). If that doesn't improve drainage, contact City.

SWALE IS NOT FLOWING (WATER PONDING)

- Check for settling/depressions or high points in swale area. Make minor adjustments to grading using City-approved mulch and/or bioretention soil mix; replace plants as necessary. Check with City for continuing issues.

SHRUBS BLOCK VISIBILITY

- Prune vegetation to maintain proper visibility for safety. Maximum shrub height should be 24 inches adjacent to roadways, except for specimen shrubs. Follow good pruning guidelines. Contact City about replacement of consistently problematic plants.

ORNAMENTAL GRASSES ARE TOO THICK

- For perennial grasses, cut back dead vegetation in early spring before new growth emerges. For evergreen grasses, hand rake to remove dead vegetation and cut back every 2-3 years or as needed.

DOWNSPOUTS & RAINBARRELS

- Rooftop runoff can contribute to high flows and pollutants when it flows directly into the City's stormwater system.
- Consider disconnecting downspouts from the City's storm drainage system. Use splash blocks to disperse water on-site, or collect in rain barrels for irrigation. Check soils for proper infiltration first.
- Downspouts and splash blocks should be kept free of debris and direct flows away from buildings, into rain gardens or other areas where the water infiltrates quickly into the soil.


downspout splash block


porous concrete

POROUS PAVEMENTS

- Porous pavements allow water to filter through the pavement to gravel and soils below. Types include porous concrete, porous asphalt, special concrete or brick unit pavers, and plastic cells filled with gravel or grass.
- Porous pavements require periodic cleaning to remove any weeds or debris that accumulate. Contact the City for further information.

Contact

Surface Water and Environmental Services
(206) 801-2450

Resources

Natural Yard Care: http://your.kingcounty.gov/solidwaste/naturalyardcare/index.asp

Natural Drainage Maintenance Manual: http://www.cityofseattle.net/util/groups/public/@spu/@usm/documents/webcontent/spu02_020021.pdf

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