Bureau of Environmental Services • City of Portland

Maintaining Your Stormwater Management Facility

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Home Owner Handbook

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers

Sam Adams, Commissioner • Dean Marriott, Director

A stormwater facility uses landscape, structural features or both, to slow, filter or infiltrate stormwater runoff on your property. These facilities are important in removing pollutants from stormwater and reducing the volume of stormwater that flows into our rivers and streams.

Property owners are legally responsible for inspecting and maintaining any stormwater management facilities on their sites. Proper maintenance is critical! Without it, the performance and purpose of the facility will be greatly diminished.

Your Connection to Portland's Rivers and streams

Managing Stormwater Runoff

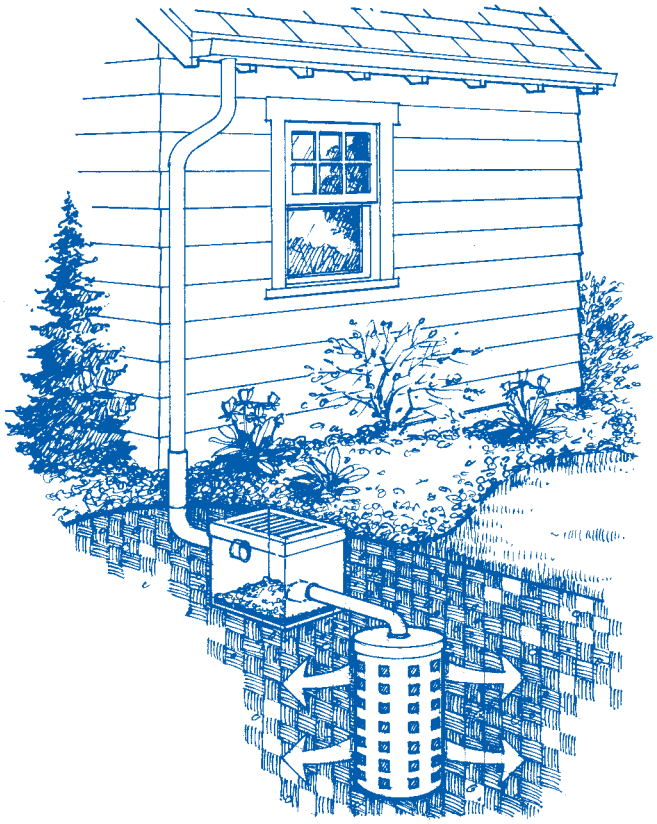
When it rains or snows in urban areas, stormwater washes over streets, roofs, and other hard surfaces picking up dirt, chemicals and oil along the way. The traditional way of dealing with stormwater runoff was to dispose of it in a pipe that drains to a river or stream. The City of Portland is moving away from this out of sight, out of mind method of dealing with stormwater and is exploring new methods of onsite stormwater management.

Onsite stormwater management mimics nature. Onsite facilities allow runoff to soak into the ground, help filter out pollutants, and slow the flow rate of runoff leaving your site.

Many onsite measures also benefit property owners. For example, vegetated facilities can improve the appearance of your property, provide habitat for wildlife and decrease landscape maintenance and water use.

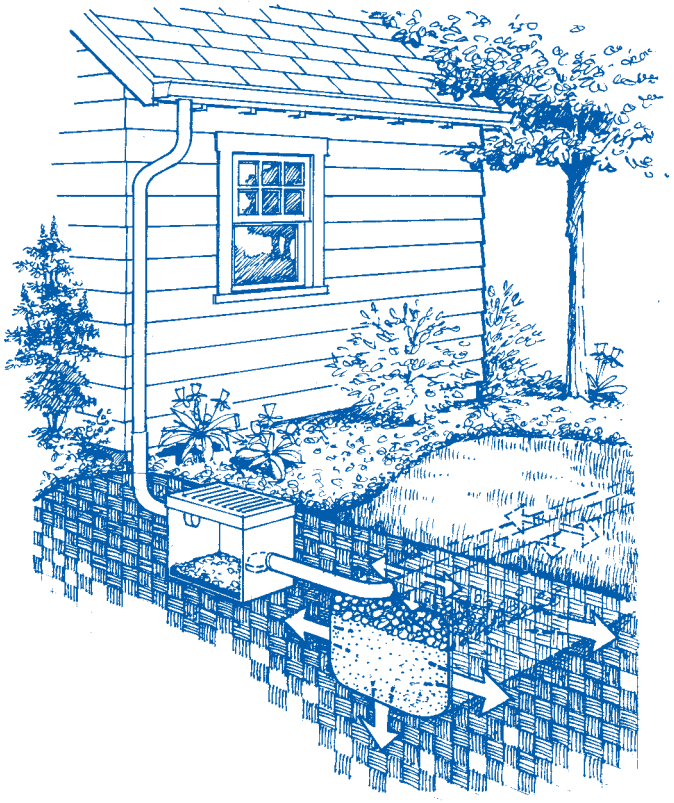
How Your Facility Works

These are the most common stormwater management facilities. If your home was built after 1999 you likely have one of the following types of facilities on your site:



Drywell (Sump)

A drywell, or sump, is a precast pipe made from concrete, plastic or other material that collects stormwater runoff from your roof and recharges it into the ground. Runoff is routed to the drywell by a drainpipe connected to a downspout that collects stormwater from roof gutters. Sometimes silt basins are installed upstream from the drywell to remove sediment before the stormwater enters the drywell. This improves stormwater quality and prevents the drywell from plugging.
Estimated Life Expectancy - 30 years

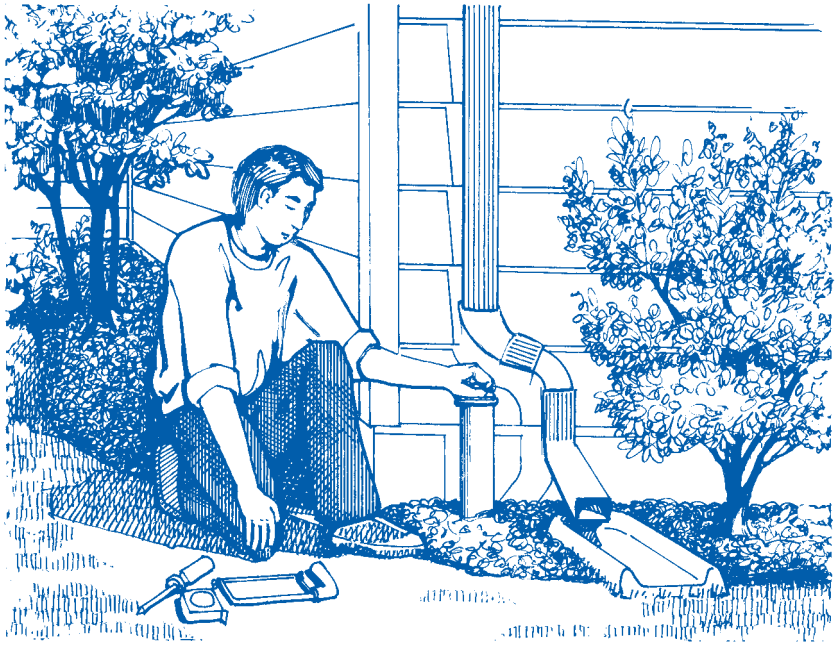


Soakage Trench

A soakage trench receives runoff from rooftops and allows the water to gradually seep into the soil. A soakage trench is backfilled with sand and coarse stone and lined with filter fabric to remove sediments, nutrients, floatable materials, oil, grease, and bacteria. The trench surface may be covered with grating, stone, sand, or a grassed cover with a surface outlet. Trenches always have silt basins.
Estimated Life Expectancy - 30 years

Trees
Trees capture and hold rainfall in leaves and branches to reduce stormwater flow. Trees improve water quality by filtering rainwater and holding soils in place, which is especially important along streambanks. They provide shade that lowers air and runoff temperatures. Trees are suitable for all soil types and in almost any location, and are highly recommended as a stormwater management technique.
Estimated Life Expectancy - 80 years

Porous Pavement
Porous pavement is a general term for numerous products and design approaches that allow stormwater to infiltrate a hard surface. Many types are available, including special asphalt paving; manufactured products of concrete, gravel, and plastic; paving stones; and brick. Porous pavement accepts only the rainfall that falls on it and should not be used to manage drainage from other areas. It may be used for walkways, patios, plazas, driveways, and parking lots.
Expected Life Expectancy - 20 year



Downspout Disconnects / Vegetated Filters
A vegetated filter is a gently sloping area planted with trees, ground covers and grasses. Stormwater enters the facility as sheet flow from a rooftop. Vegetated filters sometimes have wood or rock dams to slow the water. Filters often are the areas receiving water from downspout disconnections.
Estimated Life Expectancy - 50 years

Inspecting and Maintaining Your Facility

It's important to make sure your facility is functioning properly. You are legally required to inspect your facility regularly and maintain it.

It's a good idea to inspect your facility at least twice a year and after heavy rainfall. City Code requires you to keep inspection and maintenance logs. Logs should note all inspection dates, the facility components that were inspected, and any maintenance or repairs made.

Sample Inspection and Maintenance Log

Date _____ Name_____

Facility Piece	Trash, Debris, Sediment	Erosion	Vegetation	Broken Parts	Ponding Water, Pests, Odors	Maintenance Actions(s) Taken
Inlet						
Facility Structure						
Vegetation						

(shaded areas mean issues do not apply)

Other Observations

_____

_____

_____

_____

_____

_____

_____

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_____

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Suggested Schedule for Inspection

SPRING
- Clean out debris
- Clean out weeds and other unwanted plants
- Check for erosion (more than an inch of soil gone)
- Check for pests and odors

SUMMER
- Clean out trash and other debris
- When facility is dry, do major scoop out of sediment
- Make any structural repairs

FALL
- Clean out debris
- Clean out weeds and other unwanted plants-before they go to seed and remove plant debris
- Replace dead or dying plants

WINTER
- Clean out debris
- Check for ponding water

What To Look For and What To Do

Watch for slopes, slick surfaces, and vegetation debris, which may cause slips, trips, and falls. Avoid maintenance work in wet weather. Always wash your hands after maintaining a facility.

Trash/Debris/Sediment

Stormwater facilities collect a variety of trash, sediment and debris.

What To Look For: You should inspect for trash, sediment and debris once a month.

What To Do: Remove trash and debris. Sediment removal is easier during dry weather. Try to minimize damage to any underlying vegetation. Re-seed and mulch exposed soil. Reuse removed sediment onsite. Never dump it in the street or in a storm drain.

Erosion

Inlets, flow channels, and berms are susceptible to erosion, and can add sediment to runoff and cause some facilities to fail.

What To Look For: Look for cuts or channels in the surface of the facility. Any area where more than one inch of erosion has occurred needs maintenance.

What To Do: Fill eroded areas with soil, compact it lightly, then cover with mulch, compost, seed, or sod. Planting deep or heavily rooted plants will help stabilize the soil.

Vegetation

Vegetation is an important part of your facility. Maintain desired vegetation and control unwanted growth and nuisance vegetation. Inspect in fall and spring.

What To Look For: Look for nuisance and invasive vegetation such as blackberry, ivy and reed canary grass. Replace dead and dying plants.

What To Do:

Nuisance, Unwanted,or Dead Vegetation

- Immediately remove nuisance and invasive vegetation, before it can go to seed and spread through the facility.
- Immediately remove dropped leaves, dead plants, and grass and other plant clippings.
- Avoid using herbicides to remove unwanted vegetation.

Sediment Buildup

- Remove sediment before it reaches a height that kills vegetation.

Mowing

- Most grass facilities can be mowed or weed whacked. Keep grass between six and ten inches tall.
- Consider replacing grass with shrubs or wetland plants that need little or no maintenance.

Structural Deficiencies

Structural components of stormwater management facilities include plates, grates, pipes, berms, and other concrete, metal or plastic parts.

What To Look For: Look for cracks, scratches, dents, rust, loose fittings, broken or missing components, and insufficient lubrication for moving parts.

What To Do: Repair or replace any major damage. Many components will need to be repaired or replaced during the life of the facility as a result of age, wear, or vandalism. These commonly include:

- Inflow and outflow pipes
- Concrete, metal, and plastic structures and components

Ponding Water

Ponding water usually means the facility is clogged. You should always inspect facilities after major storm events (1/2 inch in 24 hours).

What To Look For: Watch for water that has ponded for more than 48 hours.

What To Do: Clogging is usually caused by sediment or debris. Remove debris from pipes and rake the soil to restore water flow. If raking is insufficient, try removing the top few inches of soil.

Pests

Standing water can be a breeding ground for mosquitoes and vegetated areas can attract all kinds of wildlife, including rats.

What To Look For: Look for mosquito larvae in standing water, especially during warmer weather. Larvae look like tiny wiggling sticks floating perpendicular to the water's surface. Look for rat holes and burrows.

What To Do: Remove pests from the facility. Remove the cause of ponding water. Backfill rodent burrows and set traps. Call Multnomah County Vector Control for more information.

Odors

What To Look For: Plants decaying under sediment can cause odors.

What To Do: Remove sediment

Where to Get More Help

City of Portland

For information about:

Portland Stormwater Management Manual
Bureau of Environmental Services,
503-823-7761
www.portlandonline.com/bes/index.cfm?c=35117

Invasive plant removal and native plantings
Environmental Services Watershed Revegetation Program, 503-823-5563
www.portlandonline.com/bes/index.cfm?c=dffci

Naturescaping for Clean Rivers Program
503-797-1842
www.portlandonline.com/bes/index.cfm?c=32142

Native Plant Society
503-460-3198
www.npsoregon.org

Master Gardeners
541-737-1382
www.orst.edu/extension/mg/

Multnomah County Vector Control
(for rats and mosquitoes), 503-988-3464
www.mchealth.org/vector/

Professional maintenance services:
Look in yellow pages under landscape contractors, landscape architects, and professional engineers (environmental, civil). Contact product manufacturers for manufactured facilities.

Other pest issues:
Look in yellow pages under pest control

Other Ways You Can Help Rivers and Streams

n Your Home or Business

- Use nontoxic cleaners.
- Properly dispose of hazardous materials.
- Conserve energy. Switch to compact fluorescent bulbs, turn down the heat, do the laundry with cold water, purchase energy-efficient appliances.
- Use water wisely. Fix leaks, use low-flow showerheads, use only the water you need.

In Your Yard

- Plant native vegetation.
- Plant trees
- Avoid using chemicals on your lawn.
- Sweep instead of hose.
- Cover bare soil with mulch or plants.
- Compost yard debris.
- Use drip irrigation.

In and Out of Your Car

- Properly maintain vehicles.
- Wash vehicles where water is recycled.
- Drive less. Use transit, bike, walk, or carpool.
- Recycle motor oil at the curbside.
- Clean up spills or leaks.
- Remove your paved driveway and put in porous pavement.

In Your Community

- Volunteer. Join tree planting, stream restoration, or ivy removal projects.
- Report spills and illegal dumping. Call 503-823-7180.
- Don't litter. Pick up your pet's waste and put it in the garbage or toilet. Do not compost it.

In Parks and Natural Areas

- Stay on designated hiking trails and biking areas.
- Keep dogs on leashes and away from the streambanks and water; and scoop up after them.

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