



STORMWATER FACILITY INSPECTION & MAINTENANCE GUIDE FOR CITY RESIDENTS

MADE IN PARTNERSHIP BY
CITY OF SNOHOMISH & SNOHOMISH CONSERVATION DISTRICT

STORMWATER'S SIGNIFICANCE

Every year, the City of Snohomish receives an average of 40 to 50 inches of rain, with the vast majority falling from October to April, when precipitation is recorded on more than half the days in each of those months.

The water that does not infiltrate into the ground or evaporate becomes stormwater runoff, which can pick up and transport sediment and pollutants like fertilizers, pesticides, automotive liquids, and pet waste. Without proper management, this contaminated runoff flows directly into our local waterways, causing a negative downstream effect on the Puget Sound ecosystem.

Stormwater ponds are vital tools for managing this runoff. They slow water flow, allow sediments to settle, and reduce pollutants before they reach nearby bodies of water.

Beyond pollution control, these ponds provide downstream channel protection by reducing flooding, and they provide essential habitat for insects, amphibians, birds, and mammals.

Proper maintenance ensures they continue to protect both water quality and community safety.

The Snohomish Stormwater System

Stormwater is collected from public and private streets, parking lots, green spaces, rooftops, and other pervious and impervious surfaces. The first collection point in the stormwater system is typically a catch basin. This is an underground chamber accessed through a grated opening at street level.

Stormwater flows through the grate and enters the basin, allowing sediment to settle to the bottom. The cleaner water exits the basin in underground pipes, where it will eventually discharge into another stormwater feature, a larger body of water, or the City's wastewater treatment plant.



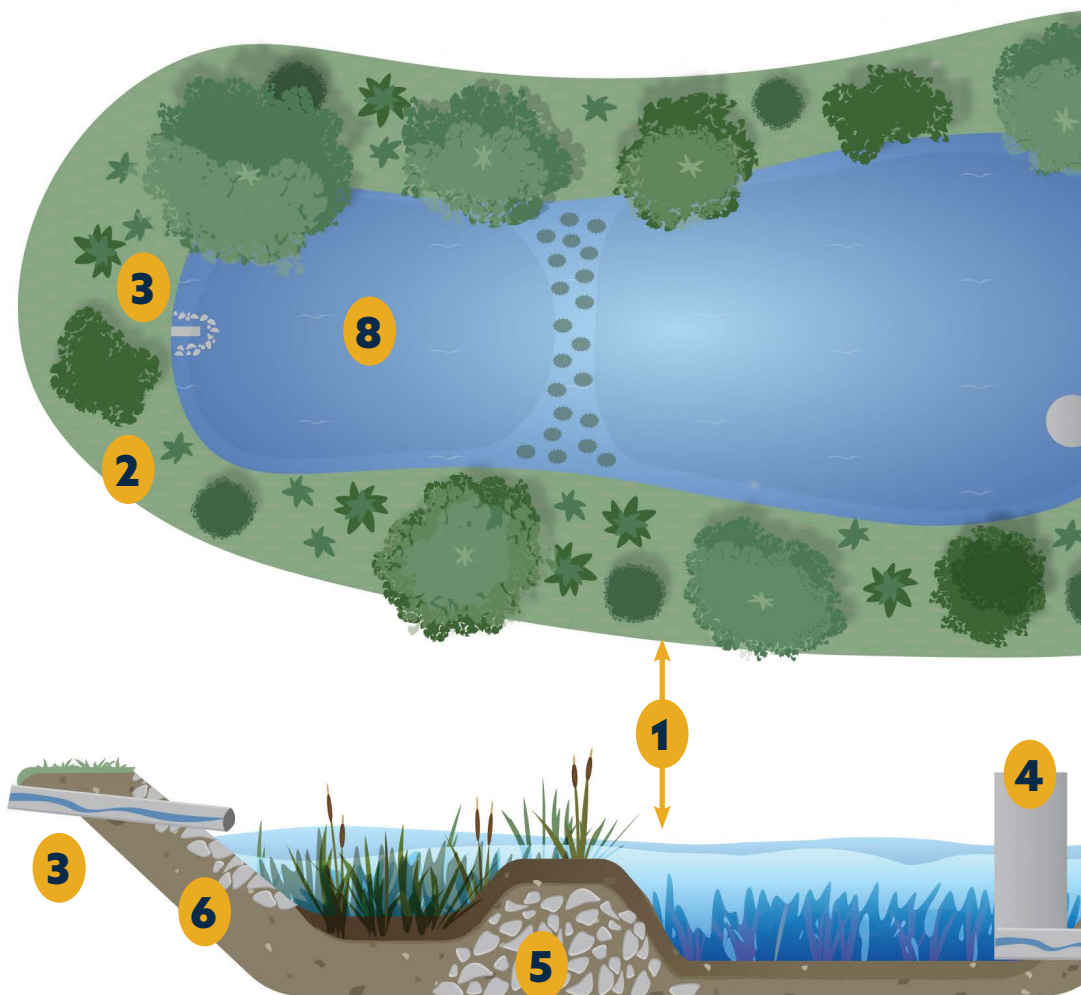
The City maintains this system when it is on city property, which predominantly includes City roads and city-owned buildings, parks, and other infrastructure.

Private property owners are responsible for maintaining stormwater features on their property, as required by Snohomish Municipal Code (SMC) 15.16.070. The most common examples are catch basins in parking lots and detention ponds in homeowner association (HOA) neighborhoods.

PARTS OF A POND

A stormwater pond may look like a simple hole in the ground, but it actually contains multiple complex components. By slowing flow and storing water, ponds can filter sediment and pollution before they enter major water bodies.

There are two primary types of stormwater ponds: retention and detention. Retention ponds maintain a pool of water year-round, which slowly infiltrates into the underlying soils, increasing pollutant



removal. Detention ponds only hold water during periods of heavier or more consistent rain, which gets released gradually through an outlet.

Ponds and other above-ground stormwater facilities contain features to help mitigate the effects of stormwater pollution on the environment and infrastructure.



MANY STORMWATER PONDS INCLUDE:

- 1** A depression which forms the main shape of the feature and temporarily holds water.
- 2** A planted embankment around the perimeter of the pond or swale.
- 3** Inlet pipes that let in water from surrounding features.
- 4** Outlet structures and pipes to control the flow of water out of the feature.
- 5** Berms which help control erosion, intercept runoff, and add embankment stability.
- 6** Riprap, energy dissipaters, and splash pads to prevent slope erosion.
- 7** Emergency spillways that allow overflow during periods of heavy rainfall.
- 8** Forebays to capture sediment and debris before they reach the main pond chamber.

All of these elements require regular upkeep to ensure efficiency and efficacy.



MAINTENANCE TASKS

Maintenance needs vary based on pond condition. A pond that has been regularly maintained will require less work than one that has been neglected.

If your pond is out of compliance, don't worry, you do not have to fix everything at once! Work can be completed in manageable phases, especially when multiple issues need correction.

Under SMC 15.16.070, you have:

- Within 1 year for typical maintenance of facilities
- Within 2 years for maintenance that requires capital construction of more than \$25,000

Riprap, Energy Dissipaters, and Splash Pads

Inspection frequency: Quarterly.

Replace and add rocks.

- If the rocks have fallen out of place, ensure they are put back to prevent erosion from the inflow. Add rocks as needed, but don't block the flow of water.

Fencing

Inspection frequency: As needed.

Replace broken segments and stabilize leaning segments.

- If a fence has been damaged, ensure it is replaced and all broken pieces are removed.
- Over time, a fence may begin to lean towards the pond due to settling. Move the fence back if possible and stabilize the posts to prevent future damage.

Embankments

Inspection frequency: Quarterly.

Stabilize slumping and eroding embankments.

- If an embankment is slumping or eroding, contact a pond maintenance contractor to determine the extent of work required. Working on embankment stabilization may be hazardous to property owners without experience.

Water Quality

Inspection frequency: As needed.

Water should be clear or have slight turbidity/cloudiness, and there should not be algae or duck weed growing on the surface.

- If algae or duck weed has developed, some can be skimmed off the surface and disposed of properly. Herbicides should be avoided as they will cause pollution in the pond and further downstream. Instead, focus on trapping sediment before it enters the pond. Keeping sediment out reduces the nutrients (like phosphorus) that algae and duck weed feed on and helps maintain good water flow, which can also limit problem vegetation.
- For water with high turbidity/cloudiness, aluminum sulfate may be used to bind to excess nutrients without harming the environment. This method should be used during periods of less rain to ensure effectiveness.

For all pond components, clear sediment and litter regularly and remove overgrown plants with hand or power tools. Use caution with power tools to prevent injury or damage to the structures.



Depressions

Inspection frequency: Yearly.

Repair cracks, remove trees, and maintain pond capacity.

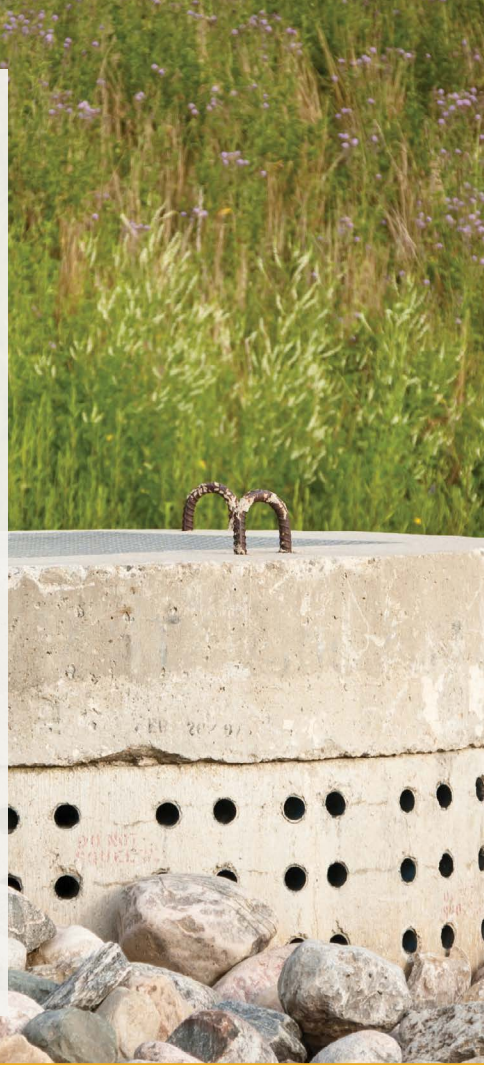
- For ponds lined with concrete, patch holes and fill in small cracks with cement or mastic to minimize leaks and prevent further breakdown.
 - If the cracking is significant, contact a pond maintenance contractor to determine the extent of work required.
- Trees should be cleared when possible. If the pond is within a critical area, a tree may be removed if it falls under one of the exemptions in SMC 14.255.050. For any other case, refer to the exemptions in SMC 14.120.060.
- If more than 10% of the pond's capacity is filled with sediment, contact a pond maintenance contractor to determine the extent of work required. Dredging will likely be needed if maintenance has not been completed in over 5 years. Runoff, erosion, and decaying plants can all lead to a buildup of material at the bottom of the pond.
 - To determine what 10% of the pond's capacity looks like, view your property's stormwater planning documents or contact the City of Snohomish for available records. If records do not exist, identify if more than 1 foot of the pond's capacity is filled with sediment.
- Once the pond has been cleaned, place a depth marker to better track how much sediment builds up over time.



Control Structures

Inspection frequency: Quarterly.

- Clear inlets and outlets of all debris to allow water to flow freely.
- Identify any potential damage to the structure, including cracks, chips, dents, or punctures. Some issues can be fixed without a contractor, such as using environmentally safe sealants to seal small cracks, but larger issues will require a third-party to repair.
- Determine if pipes are clogged with sediment or debris, including oil and grease. Small clogs that are close to outlets may be cleared with hand tools. Clogs that are deeper within the pipe may require jetting services.
- Repair undercut areas around inlets and outlets.

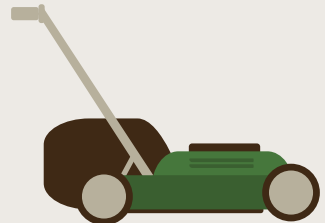


A Professional Might Help...

Call a professional to work within a catch basin or other confined space!



Remove animal nests or burrows and plug the holes



Mow banks and trim branches that reach into the pond

WORKING WITH CONTRACTORS

Property owners and HOA residents can manage most routine maintenance tasks. However, certain activities pose safety risks and should be performed by licensed contractors.

Use the following tips when hiring a contractor to ensure all of the necessary work gets completed.

Understand the problems in-depth

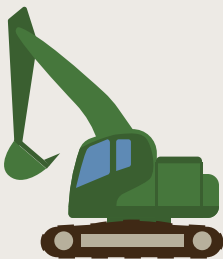
- Schedule an inspection with the City's Stormwater Department and learn how to conduct future inspections on your own.
- Know exactly what issues need correcting to minimize surprises during work and help you evaluate contractor proposals.

Call multiple contractors.

- Get multiple bids to compare proposed solutions, costs, and contractor experience.

Be upfront about the budget.

- Research typical costs beforehand and share your budget with contractors.
- Be clear about financial limits to ensure you receive appropriate solutions that meet compliance standards without unnecessary additions.



Dredge out
accumulated pond
muck at the bottom



Check embankment
stability and propose
solutions if unstable



Rototill a compost/
soil mix into ruts



LET'S ALL DO OUR PART TO KEEP STORMWATER CLEAN!

According to the Washington State Department of Ecology, stormwater runoff is the leading cause of pollution in the state's waterways. Stormwater ponds play a critical role in filtering sediment and pollutants from our city's runoff. Proper maintenance keeps them working effectively, ensures compliance with city code, and protects our shared water resources.

For assistance, contact the City of Snohomish NPDES Program Coordinator via snohomishwa.gov/213/Stormwater

Snohomish Conservation District 
working together for better ground since 1941



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