



Rain Garden how-to's:



Call 811 to locate underground utilities before you dig. Re-grading and alteration to your property or structure may require a permit. Contact your local planning department to find out whether permits are required for your project.

Did you know?

Pierce County receives 38 to 56 inches of rain per year. Rain that runs off your roof and driveway flows into stormwater pipes, streams, or groundwater. This runoff could be directed to a rain garden in your yard that lets the rain soak in.

Capturing rainwater from hard surfaces on your property reduces pollution and erosion in local rivers and streams and replenishes groundwater supplies that we rely on for drinking water.

What is a rain garden?

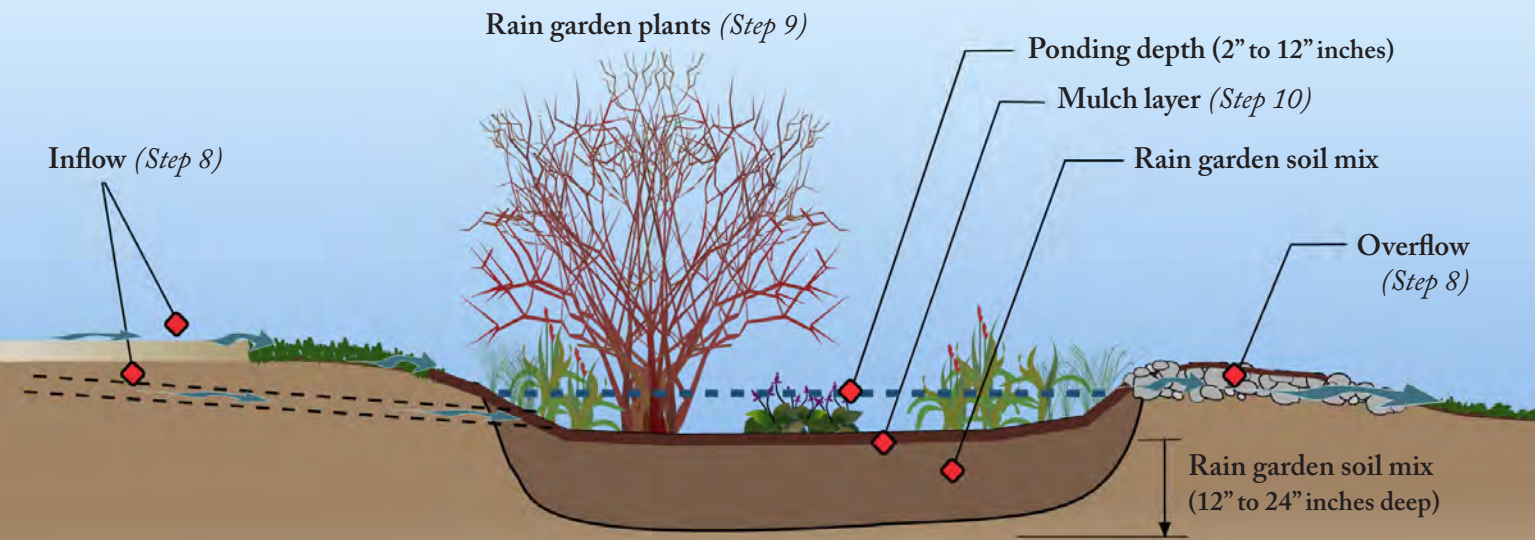
A rain garden is a shallow depression in the ground with special soils that collects rainwater and is often landscaped with native plants. A rain garden is a great place to collect water from downspouts or paved areas and overflow from rain barrels or cisterns.

Why plant a rain garden?

Rain that runs off hard surfaces, such as rooftops and driveways, picks up pollutants as it flows into the stormwater system (e.g. roadside ditches, storm drains, detention ponds, etc.). In most cases, that polluted runoff enters local waterways without treatment.

A rain garden can do many important jobs:

- Allows rainwater to soak into the ground which replenishes the groundwater supplies we rely on for drinking water.
- Reduces stream and river flooding during large storms.
- Filters out pollutants as the water moves through plants and soil.
- Provides habitat for birds, butterflies, and beneficial insects.



Setbacks - these setbacks are to be used as guidelines. Check with your local city or town for their specific requirements.

- Buildings - 10 ft.
- Property lines - 10 ft.
- Steep slopes - 100 ft.
- Wells - 100 ft.



Well Draining

Greater than 0.5 inches per hour

Poor Draining

Less than 0.5 inches per hour

Not Suitable for a Rain Garden

Less than 0.1 inches per hour

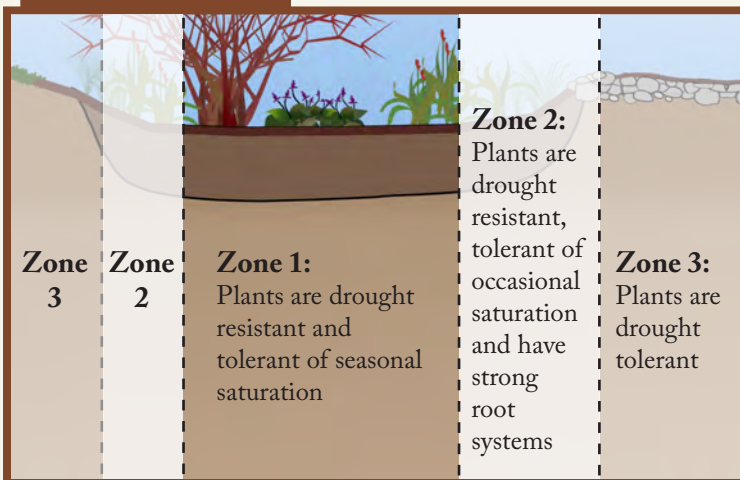
If you can't build a rain garden, consider planting native plants and trees. They do as much good work as rain gardens!

Want to install a rain garden? Here's How:

1. **Observe your site. Where does your rainwater go now?** Some downspouts are tied into a stormwater system and go straight into an underground pipe. Most are directed away from houses and flow over a driveway or street into a storm drain. Notice the slope of your property — does it slope toward or away from your home and your neighbor's property?
2. **Identify the best location for your rain garden.** Rain gardens are best situated in natural depressions where the water does not pond. Rain gardens should not be located over underground storage tanks, septic systems, utilities, or drainfields. Setback standards are to the left. Call 811 to locate underground utilities. Rain gardens should not be located in areas that slope toward structures (including your neighbors') or on steep slopes. Avoid placing rain gardens underneath a tree canopy, and don't remove mature trees or native vegetation to install a rain garden - those areas do the same thing, and may even work better than a rain garden.
3. **Dig a test hole to see how fast water is absorbed into the soil (this step is best done during the wet season, especially in areas with a high groundwater).** For large rain gardens, dig multiple test holes to ensure infiltration is consistent. Dig a hole 2 feet deep and calculate the rate of water infiltration. Fill the hole with approximately 12 inches of water and measure the length of time for the water to drain into the soil. During the dry season, fill the hole and let it empty 3 times, and use the time from the third fill to calculate time to infiltrate. To calculate, divide the water depth by the time to infiltrate to get the inches per hour. **Refer to chart on left.** (Example: 12 inches of water depth ÷ 15 hours to infiltrate = 0.8 inches of infiltration per hour.)
4. **Determine the impervious area (the area that doesn't allow rainwater to infiltrate into the ground) that will drain to the rain garden.** Calculate the surface area (length multiplied by width) of the place you will send water from into the rain garden (e.g. roof, driveway, patio, etc.). The rain garden should be sized to 10 to 20% of that area, and slightly larger in poor draining soils (to determine soil type, go to step 4). Rain gardens can always be larger, but are not recommended to be smaller. Undersized rain gardens can flood during the rainy season due to oversaturation.

5. **Determine how you will send water into the rain garden and where the overflow will be directed.** The most common methods to send water to the rain garden are rock lined trenches or underground piping. Every rain garden must have an overflow to let excess water drain from the rain garden during heavy storm events. Do not direct overflow toward structures, sidewalks, or neighboring properties. Overflow can go into another rain garden, an infiltration trench, or into the storm drainage system. The overflow should always be lower in elevation than the inflow to make sure water does not back up.
6. **Choose the shape and edges of your rain garden and start digging.** The best times of year to install a rain garden are fall and early spring, when you can take advantage of seasonal rains to help establish your plants. Mark the edges of your rain garden. Remove existing vegetation (set aside any plants you want to re-use). Rain gardens vary in depth from 18 to 36 inches with side slopes of 20% or 4:1. If your garden is on a slope, you should build a raised vegetated barrier or dig deeper. Make sure the bottom of the rain garden is level so water will infiltrate evenly and not pond in one area.
7. **Backfill amended soil to allow 2 to 12 inch ponding depth at the bottom of the rain garden (Zone 1).** If existing soil is well draining, amend soil (mix compost into existing soils) to be approximately 65% existing soil and 35% compost. If your soil is poor draining, replace your soil entirely with 60% screen sand and 40% compost. Thoroughly mix soil together, do not layer. Backfill the rain garden to allow a 2 to 12 inch ponding depth and with up to 20% side-slopes. Amending soil with compost will increase infiltration and plant growth in the rain garden.
8. **Install inflow and overflow.** Make sure your overflow is at a lower elevation than your inflow. (See Step 5 for explanation.) It is helpful to place rocks around the inflow and overflow to prevent soil erosion around the location that water is flowing into and out of the rain garden.
9. **Pick out your plants.** Native plants work best in rain gardens, because they need less water and fertilizer to thrive. Native plant resources are listed at the end of this publication. Zone 1 is the flat area at the bottom of the rain garden. Plants within Zone 1 should be both drought resistant and tolerant of seasonal saturation, because some ponding may occur during the wet season. Zone 2 is the slope on the sides of the rain garden. Plants within Zone 2 should be tolerant of occasional saturation, drought resistant, and have strong root systems to stabilize slopes. Zone 3 is the top of the rain garden and should be planted with drought tolerant native plants. If you are planting the rain garden in phases, Zone 1 should be planted first.
10. **Mulch the garden.** After planting, place a 2-3 inch layer of mulch throughout the new planting areas. Leave a few inch separation between the base of plants and mulch to prevent root-rot. Mulch will reduce erosion, increase organic matter in the soil, and reduce watering needs and weed growth. Mulch annually. Common mulch materials are bark and wood chips, shredded newspaper and dried leaves.

Plant Zone Areas

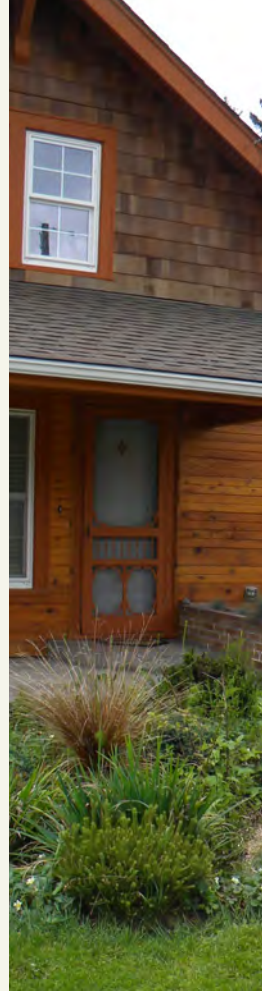


11. Water the rain garden regularly.

Plants should be watered regularly during the dry season in the first year. Water the rain garden deeply, but infrequently, to ensure deep root formation and plant survival.

12. Maintain your rain garden.

Replace plants that don't survive and pull weeds to allow plants to fill in. Check your inflow and overflow seasonally to make sure it does not become clogged.





The Next Step



Register Your Rain Garden

Once you have your rain garden installed, register it at www.12000raingardens.org. Join Washington State University and Stewardship Partners in this groundbreaking campaign to install 12,000 Rain Gardens in the Puget Sound Region by 2016.

Resources

For the most up-to-date version of this list, visit www.piercecountywa.org/raingarden

Rain Garden Handbook for Western Washington Homeowners, WSU – Pierce County

http://county.wsu.edu/mason/nrs/water/Documents/Raingarden_handbook.pdf

Washington Native Plant Society

<http://www.wnps.org/>

Gardening in Western Washington – Northwest

Native Plant database, WSU Extension

<http://gardening.wsu.edu/nwnative>

WSU – Puget Sound Rain Gardens:

<http://raingarden.wsu.edu>

Native Plant Salvage Foundation:

<http://www.nativeplantsalvage.org>

Natural Yard Care Program:

<http://www.piercecountywa.org/naturalyardcare>

Rain gardens in Pierce County

City of Puyallup:

- 18th St SW rain garden cluster south of 7th Ave S
- 8th Ave NW rain garden cluster between 9th St NW and 15th St NW
- 5th Ave SE rain garden cluster between 14th St SE and 15th St SE

City of Tacoma:

- Envirohouse at Tacoma Landfill, 3510 S Mullen
- Center at Norpoint, 4818 Nassau Ave. NE
- Center for Urban Waters, 326 E D Street
- South L Street rain garden cluster between S 16th and S 18th Streets

Pierce County:

- Sprinkler Recreation Center, 14824 C St, Tacoma 98444
- Environmental Services Building, 9850 – 64th St W, University Place 98467

Lakewood: Lakewood City Hall, 6000 Main St SW

Eatonville:

- Orchard Ave N rain garden cluster south of Carter St W
- Baumgartner Pl NE rain garden cluster