RAIN GARDENS
STORMWATER MANAGEMENT

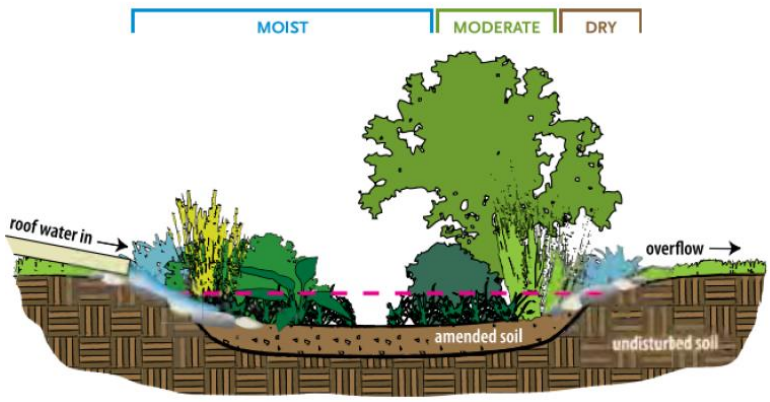
What is a Rain Garden?

A rain garden is a sunken garden bed that collects and treats stormwater runoff, primarily from rooftops, driveways, sidewalks, parking lots, and streets. It is a landscaped area in a basin shape designed to capture runoff and settle and filter out sediment and pollutants. Runoff is piped or channeled to the basin, where it is temporarily stored until it infiltrates the soil. Other names for rain gardens that are often used include bio retention basins and vegetated basins.

There are two kinds of rain gardens:

1. **Infiltration:** cleanses, detains, and reduces stormwater runoff volumes by allowing water to seep into the surrounding soils; planted (more common)
2. **Filtration:** cleanses and detains stormwater runoff, routed using piping; engineered (less common).

Do not install a rain garden near a building or fence line; this could lead to unwanted structural damage. Specifically, do not install a rain garden within 3 feet of a sidewalk, within 6 feet from a basement, within 2 feet form a crawl space or slab, or within 10 feet from a retaining wall/fence.



Source: EMSWCD

Purpose of Rain Gardens

To enhance stormwater management, water conservation, erosion control, water quality, and wildlife habitat.

Goal of Rain Gardens

To allow water to be retained in an area with plants and soil, and to allow the water to pass through the plant roots and back in the soil.

Installation Instructions

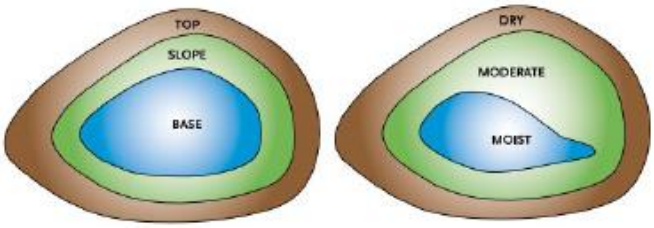
1. **Observe and map your site.**
   - ☐ Assess how water flows on the property.
   - ☐ Create a property map, mark existing features, storm drain locations, etc.
2. **Determine the location of the rain garden**
   - ☐ Needs to be near the rain gutter downspout
   - ☐ Shouldn't be on a slope, near septic drainage, within 3 feet of the groundwater table, or in soils with poor drainage or contaminated soils
   - ☐ Don't construct a rain garden within 10 feet of a foundation or 5 feet from a property line
3. **Assess soil**
   - ☐ Determine soil type to determine amendments needed
   - ☐ Soil testing by hand techniques: feel test, ribbon test, mason jar test, and the infiltration test
   - ☐ Online soil resource (listed below in resources)
   - ☐ Soils that drain less than ½ inch per hour are not likely suitable for a rain garden
- ☐ Make soil amendments

4. **Determine the size of the rain garden**
   - ☐ Calculate roof area, and multiply by either 0.1 (10%) for well drained soils or 0.2 (20%) for poor drained soils to size the rain garden. This is the size the rain garden should be *at least*, to allow enough time for water to infiltrate
   - ☐ The ponding depth for a rain garden should be between 6-24 inches, depending on the infiltration rate (see Table 2 below).

5. **Constructing a rain garden**
   - ☐ Once the rain garden placement is located, design the overflow and irrigation plans prior to installing
   - ☐ Excavate the site, either by hand or with machinery
   - ☐ Grade & rake soil to reduce compaction
   - ☐ Install PVC pipe for diverting water into the rain garden, and the overflow; grade the pipe to drop 1 inch every 10 feet, buried 1 foot down
   - ☐ Install rock, amended soil, mulch, plants, and a berm at least 2 inches high to keep in water

6. **Choose the "right plant for the right place"**
   - ☐ Select plants that require no chemical inputs
   - ☐ Select plants requiring little to no water once established, while being water tolerant in wet months
   - ☐ Choose plants based on plant zones – Moist/base: plants prefer moist conditions
     - ➢ Moderate/intermediate: plants can tolerate moist or dry soils
     - ➢ Dry: plants thrive in drier soil
     - ➢ Refer to JSWCD website for full plant lists

7. **Maintain the rain garden**
   - ☐ Weed
   - ☐ Prune plants
   - ☐ Mulch as needed
   - ☐ Check on irrigation system, water until plants are established



Rain Garden Materials

☐ Infiltration Rain Garden materials list

- **Rocks**
  - Washed drain rock (3/4 inches, 12-inch layer)
  - Rocks to create swale
  - Riprap at entrance (prevent erosion)
  - Rocks for overflow
- **Piping**
  - Downspout connector
  - Perforated high density polyethylene pipe (4-inch)
  - Piping for overflow and outflow
- **Plants**
  - Refer to plant list and design for plants and placement
- **Compost** and **Soil** for amendments and berms (to prevent flooding)
- **Mulch**

In special cases Filtration Gardens (engineered) should be used instead of Infiltration Gardens, containing an impermeable liner:

- The seasonal high groundwater table is higher than 36 inches from the bottom of the rain garden
- The bedrock is higher than 24 inches from the bottom of the rain garden
- In potential stormwater hotspots (vehicle fueling areas, industrial loading, unloading, and material storage areas)
- In contaminated soils or groundwater
- On slopes exceeding 10% or in landslide areas where adequate setbacks cannot be met of a large storm. The overflow should be designed so that it will not clog or back up. This can be done either through an underdrain, an armored notch in a berm, or controlled outlet pipe to approved location for overland flow.

Ordinances

Jackson County requires a permit only if there is an overflow piping to a storm water disposal location.

Safety Considerations

Call Before You Dig!

Before you dig your rain garden, dial **8-1-1** and request a free utility locate for your entire property; ensure all of your utilities are marked prior to breaking any ground. This service is completely free, and the call center is open 24/7.

☐ Filtration Rain Garden materials list

- **Rocks**
  - Washed drain rock (3/4 inches, 12-inch layer)
  - Rocks to create swale
  - Riprap at entrance (prevent erosion)
  - Rocks for overflow
- **Piping**
  - Downspout connector
  - Perforated high density polyethylene pipe (4-inch)
  - Piping for overflow and outflow (underground to storm drain)
- **Impermeable liner (60-mil PVC) or Bentonite clay mat**
  - In situations where water should not be allowed to infiltrate the underlying soils due to **nearby structures** (adjacent impervious pavement, site and building walls, etc.), property lines, steep slopes (high erosion potential), high water tables, or possible groundwater contamination
- **Plants**
  - Refer to plant list and design for plants and placement
- **Compost** and **Soil** for amendments and berms (to prevent flooding)
- **Mulch**

Rain Garden in Central Point

Resources

JSWCD "Rain Garden Plants" plant list

Oregon Rain Garden Guide, Oregon Sea Grant