

Summer landscape irrigation is an important part of creating vibrant outdoor spaces – but it takes time and costs money. Many Portland residents and businesses irrigate in the summertime leading to summer water use that doubles or triples. A well-designed and well-maintained irrigation system will use water efficiently while creating a healthy landscape for years to come.

Best Practices for Irrigation

How you choose to irrigate depends on your budget, the type of plants you have, and size of your landscape. Regardless of what you use to irrigate - a hose, drip, or automatic irrigation system - there are several best practices that are important to follow:

- Prepare the soil to ensure proper drainage and water-holding capacity. Healthy soil needs less water than poor soil.
- Water when the potential for evaporation is low – late in the evening and early in the morning.
- Actively manage and maintain your irrigation system. Check regularly for leaks and misdirected spray.
- Water lawns 1 inch of water per week (*more during long, hot dry spells*). Water lawns separately from other plants. A good rule-of-thumb for watering your landscape is to apply 50% of what you put on grass, on perennials and shrubs, and 75% for vegetables (although new starts require more water).

Manual Irrigation

If you water your landscape with hand-held hoses, several devices are available to help you irrigate efficiently.

- **Hose nozzle:** Automatic shutoff nozzles are an easy way to keep a hose from running. They are often available with multiple spray patterns such as mist, shower, and jet.
- **Soaker Hose.** Soaker hoses release water to plants through thousands of tiny pores that drip water slowly and evenly at low pressure. They are great for watering shrubs and bushes, and present an inexpensive alternative to drip irrigation systems.



- **Sprinklers.** If you use a portable sprinkler, try to use one that waters low to the ground to prevent misting and evaporation into the air. Also look for sprinklers with rotor action that lay water down at a slower rate compared to those with a constant spray pattern. Applying water at a slower rate allows water to be absorbed into the soil as opposed to running off.
- **Timers.** A hose timer that lets you set the start time and duration of a watering session is a good way to control your manual sprinkler. A variety of timers ranging from battery-operated, electric, or wind-up are available. They are typically attached to the hose bib and can be reset for each use.

Drip Irrigation

Drip irrigation is one of the most efficient ways to water plants, shrubs, vegetable gardens, and outdoor container plants. With drip



irrigation, water works its way slowly into the soil, where water goes directly to the roots of the plant, keeping evaporation to a minimum. Drip irrigation is ideal for clay soils - where too much water, too quickly, can result in puddles and run-off.

Most garden centers carry drip irrigation kits or components, and the manufacturers of these products publish instructions that go with them. With regular maintenance, a drip system can be very efficient and help you save water.

Choosing the right pieces for your drip system

Drippers or emitters, bubblers, and micro-sprayers are the types of heads used on a drip irrigation system. Each system can be customized to deliver the right amount of water where it's needed by choosing different heads for the types of plants you are watering.

- **Drippers or emitters** generally water at rates of ½, 1, and 2 gallons per hour, while **bubblers** are slightly higher. The slowest drip rate is best for clay soils; high drip-rates are best suited to sandy soils.
- **Micro-sprayers** use the most water in a drip system – up to 15 gallons per hour – but still much less than standard above-ground sprinklers. They are best for ground covers, flower beds, and pots where drippers and soakers won't fit or where plants need more humidity.

Hooking up the system

In order for a drip watering system to work properly, clean water and low water pressure are needed. A filter to prevent drip devices from clogging over time and a pressure regulator are vital pieces in any drip system. To get the most from the system, install a timer on the hose bib in order to avoid over-watering.

In-Ground Automatic Irrigation



An automatic irrigation system consists of a collection of pipes, tubing, valves, and pop-up spray heads or rotors. A plumbing permit and back-flow device that prevents irrigation water from flowing

back into the municipal water system is required for any new automatic irrigation system. Get information on backflow prevention and assemblies here:

www.portlandonline.com/water/index.cfm?c=29743

- **Spray Heads.** Pop-up spray heads can be adjusted to spray in a quarter, half, or full circle. Spray heads can put out a lot of water in a short period of time, making it necessary to have multiple, short run times to ensure that the water penetrates the soil.
- **Rotors.** These heads deliver water more slowly than spray heads, allowing soil to take in the water without puddling too quickly. Used in the past for large turf areas such as sports fields, rotors are now available and practical for smaller turf areas.

Components are typically connected to a **controller**, or a small computer that is able to control water to different parts of the landscape. Once programmed, the controller determines when, how often, and for how long the water goes out to your landscape. There are different types of irrigation controllers available:

- **Traditional.** These types of controllers rely on manual schedule entry. Some are capable of programming multiple run times, which is essential if you are using spray heads. They can also come with a water budget

feature so that one can easily adjust run times for warmer or cooler days.

- **Weather-based.** Many types of weather-based controllers are on the market today. Some use third party communication with weather stations; some are pre-programmed with historical weather data; some have on-site weather stations. Solar radiation and temperature are the primary drivers of water use in plants. Wind is also a factor. Weather-based controllers use some or all of these variables to water various landscape materials.
- **Soil Moisture Sensors.** You can add sensors to existing controllers or install a complete system with sensors and a related controller. Sensors measure the moisture content in the soil and enable the controller to water or not, depending on the level of moisture in the soil.

Getting the most from your automatic system:

- **Install a rain sensor.** Rain sensors – or rain shutoff devices - prevent an automatic system from turning on during or after rainfall. These are not necessary with a soil moisture sensor.
- **Adjust the direction of sprinkler heads.** When sprinkler heads are sending water to the pavement, instead of the plants, you're watering something that doesn't grow.
- **Repair broken heads and pipes immediately.** Broken heads and leaky pipes can waste a lot of water and money. Regularly inspect your system for pieces that are broken. Automatic does not mean maintenance-free.
- **Schedule an irrigation audit.** Find out how efficient your current system is, how to improve it, and develop a water-efficient irrigation schedule by contacting an Irrigation Association-Certified Landscape Irrigation Auditor.

Additional Resources

Irrigation Association: Visit www.irrigation.org to find a Certified Landscape Irrigation Auditor.

Regional Water Providers Consortium: Sign up for the Weekly Watering Number www.conserveh2o.org

Portland Water Bureau: Get helpful brochures on general landscape planning and maintenance, or information on finding an irrigation contractor. www.portlandoregon.gov/water/conservation