Watering

Giving each area of your garden just the right amount of water is the key to growing healthy plants with less work. Watering too much or not enough grows weak plants that are vulnerable to pests and diseases. Wise watering reduces maintenance needs and saves valuable water for people, salmon, and other wildlife.

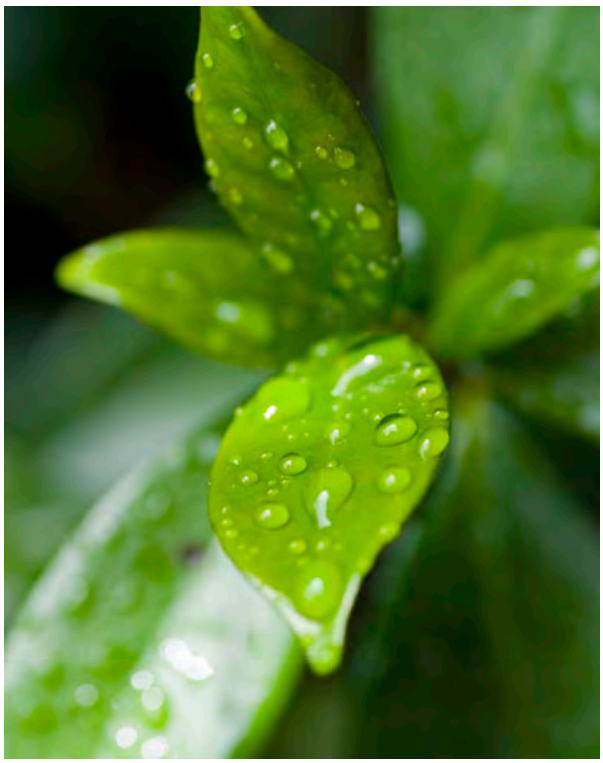
The Keys to Wise Watering

- **Let the soil be your watering guide.**
- **Use the right sprinklers, and adjust them properly.**
- **Drip and soak your way to savings.**
- **Mulch exposed soil.**
- **Plan new gardens for wise watering.**

Let the Soil Be Your Watering Guide

Dig in to check soil moisture and get a good sense of how often and how long to water. The goal is to moisten the soil a little deeper than roots grow, and let the soil surface dry out some before watering again.

Check how deep roots grow. Roots are white or tan and easy to see. If the soil is hard to dig and appears dry, water thoroughly and try again. If soil is hard to dig even when moist, a compacted layer may be stopping deep rooting.



Check soil moisture before you water. If soil is moist an inch below the surface, wait a day or more and check again before watering–unless you are trying to germinate seeds. Keep seed beds moist to just below the soil surface.

Check soil moisture a few hours after you water (several hours for clay soils). The soil should be moist as deep as roots grow. If not, water some more and check again.

City of Bellevue Utilities
450 110th Avenue NE, Bellevue, WA 98004
425-452-6932

Look Before You Water—and After

Every garden and watering system is different, and watering practices need to match. So the best ways to gauge when and how much to water are to watch plants for signs of thirst, and check if soil is moist around roots. Use the chart below to guide when, where, and how much to water different plants.

How Much Water is Enough?

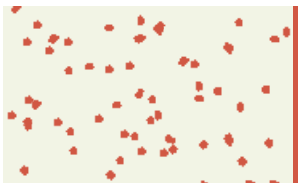
	Annuals	Trees, Shrubs and Perennials	Lawns
Where the Roots Are*	Most in top 6 -12" of soil, and spread just a foot from stem.	Most in top 10-20" of soil. May spread 2 to 5 times as far as branches.	Typically 4-8" deep, and only under grass covered area.
Signs That It's Time to Water	Soil dry 1-2" below surface. Wilted leaves don't perk up in evening.	Yellow deciduous leaves before autumn. Dull or bronzed evergreen leaves. Drooping leaves don't perk up in evening.	Dull green or yellow. Footprints show long after you walk across lawn. Difficult to push a screwdriver into soil.
Tips on How Much to Water	Moisten soil as deep as roots throughout bed or container. Annuals in full sun or containers may need water every day or two.	Moisten soil as deep as roots throughout bed or container. Water needs vary with plant and site. Many shrubs and trees only need water a few times each summer once established; few need water more than once or twice a week.	Moisten soil as deep as roots. Water about 1 inch each week in summer; one-half inch if lawn is shaded. Water every 2-7 days depending on soil type, root depth, and amount of shade.

*Roots may be shallower or less widespread in compacted soil.

How Does Soil Type Affect Watering Practices?

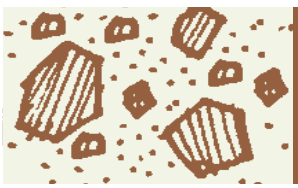
Sand feels gritty and each particle is large enough to see. Moist sand will not hold together in a ball when you squeeze it tight.

Sandy soil stores little moisture and needs frequent watering—typically every few days



Clay and silt particles are powdery and too small to see without a microscope. When wet, they can be rolled between your hands into a "snake." Clay dries into solid chunks, and dry silt is a "silky" powder.

Clay and silt absorb water slowly so water needs to be applied slowly or it will run off. Clay and silt stores lots of moisture and need watering less often than sand.



Loam is a mixture of sand, silt and clay. Moist loam can be squeezed into a ball that holds together when you open your hand, yet easily crumbles when poked with a finger.

Loam absorbs water better than clay and stores more than sand.

Use the Right Sprinklers and Adjust Them Properly

Water that is sprayed on pavement or unplanted areas, runs off soil, or evaporates before it can soak in does your plants no good. Make the most of every drop by following these simple tips:

Tips for Hose-End Sprinkling

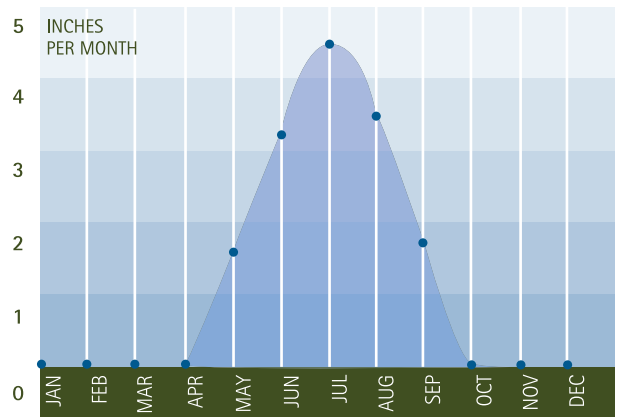
Use rotating or oscillating sprinklers (not fixed sprays) to reduce runoff. If water runs off while irrigating, turn sprinklers off and let it soak in before watering more.

Water early in the day to reduce evaporation and foliage diseases. Evaporation is lowest early in the morning, and foliage dries faster during the day than at night, which helps to prevent disease.

Place and adjust sprinklers to water plants, not driveways or walls. Use sprinklers with spray patterns that match the area needing water.

Use timers that screw into hose bib (available at garden stores) to limit watering and make early morning irrigation convenient.

Repair leaky faucets and hoses. Even small leaks waste lots of water. Tightening connections is often all that is needed to stop a leaky hose.



WATER NEEDS CHANGE WITH THE SEASONS

Lawns growing in full sun need about 1" of water a week from mid-June through late August. Water needs usually decline by 50% even in a warm September.

Pointers for In-Ground Sprinklers

Install a rain sensor to stop watering after it rains. Rain shutoffs are simple to install and economical.

Adjust watering schedules to match weather changes. "Season Adjust" or "Water Budget" features on most controllers change run times of all zones with one setting.

City of Bellevue Utilities
450 110th Avenue NE, Bellevue, WA 98004
425-452-6932

- **Water early in the morning** to reduce evaporation and foliage disease. But water when you are awake to observe problems!

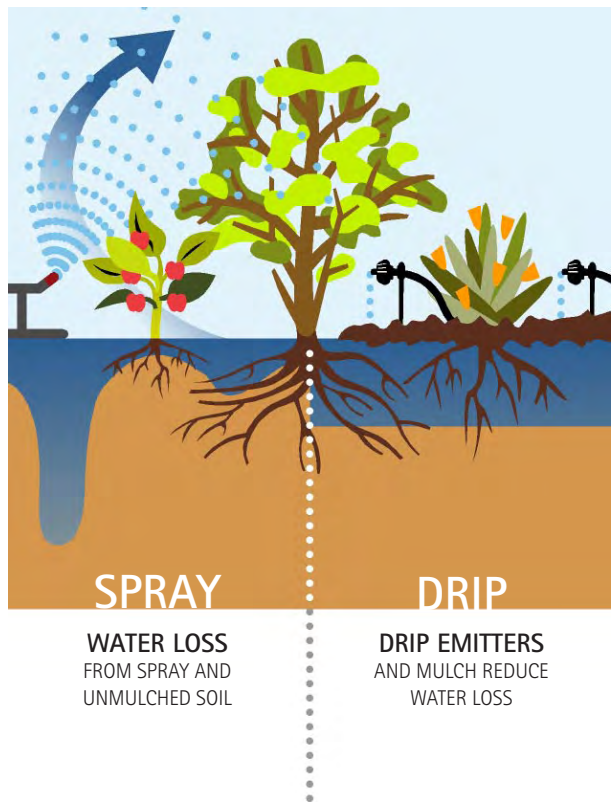
- **Trim foliage that blocks spray—**or move sprinklers from behind plants. Also raise lawn sprinklers blocked by thatch buildup.

- **Prevent mist that blows away.** Install a regulator to stop misting caused by high water pressure.

- **Inspect sprinklers while system is running** a few times each summer to identify problems.

Drip and Soak to Savings

Soaker hoses and drip irrigation systems apply water directly to the soil with little waste by evaporation or runoff. They can grow healthy plants with half the water used by sprinklers and also help prevent plant diseases and weeds! See the *Drip and Soak* guide to learn how to set up and use soaker hoses and drip irrigation.



Mulch Exposed Soil

A few inches of bark, wood chips or compost on the soil surface can reduce water needs by 30 to 50%. A good mulch layer slows evaporation, smothers water-stealing weeds, and keeps the soil loose and absorbent. See the *Mulch* guide for more information.

Shrubs and Trees:

A 2 to 4 inch layer of chipped tree trimmings or ground bark will protect the soil for years.

- Spread mulch over entire bed, or in 3 foot or wider grass-free rings around individual trees and shrubs planted in lawn.
- Lay cardboard or porous weed barrier under mulch to smother weeds and grasses.
- Keep mulch and weed barriers several inches from plant trunks to prevent rot and rodent damage.

Annual and Perennial Beds:

An inch or two of compost supplies nutrients to fast growing plants.

- Avoid uncomposted materials like sawdust, which can rob nutrients from plants.
- Spread mulch over entire beds, but keep it a few inches from plant stems to prevent rot and insect damage.

HOW LONG IS AN INCH OF WATER . . . ?

Most lawns need no more than an inch of water a week to stay green in the warm part of summer—and just a half inch if shaded.

Try these steps to find out how long your sprinklers take to apply an inch:

1. Place several empty tuna cans or other straight-sided containers around the area watered by one irrigation zone or hose-end sprinkler. Put some cans near the edges of the spray pattern and some near the center *(see illustration, right).*

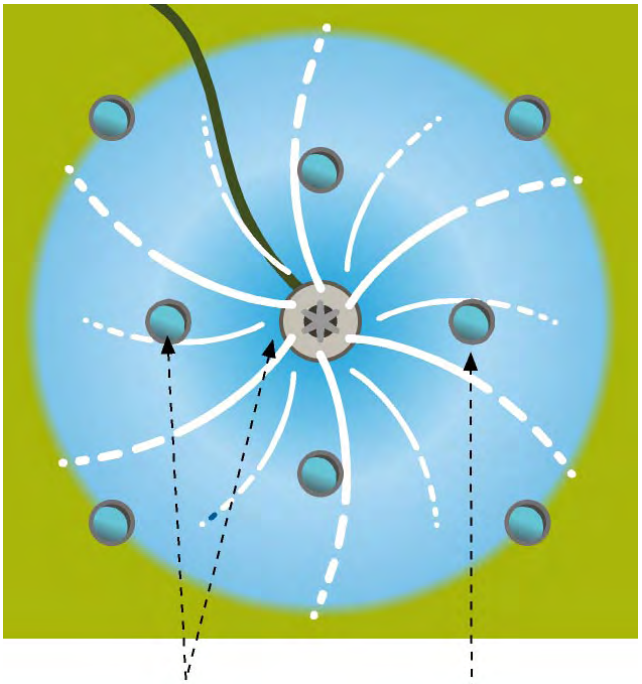
2. Run sprinklers 15 minutes.

3. Measure the water in each can with a ruler. Add the readings from all the cans together and then divide the total by the number of cans to find the average.

4. Use the chart to the right to estimate how long and how often to water each week. More frequent watering may be needed if shallow soil limits root depth.

5. Modify schedule based on observations.

Test Your Sprinkler



How Long and How Often?

Average depth in can after 15 minutes	1/8"	1/4"	1/2"	3/4"	1"
Clay or Loam Soil 2 x per week	1 hr.	30 min.	15 min.	11 min.	8 min.
Sandy Soil 3 x per week	40 min.	20 min.	10 min.	8 min.	5 min.

Times are for full sun locations.
Reduce by 50% for shade.

Plan New Gardens for Wise Watering

Good plant selection, soil preparation, and irrigation design all help to make new garden areas easier to water efficiently. Keep these simple tips in mind when planning new garden areas:

Group plants with similar water needs, so they can be watered efficiently by the same sprinkler or zone. Lawns, annual flowers, and vegetables need regular water to stay green and healthy, but most shrubs and trees need little irrigation after a few years in the garden. Check nurseries and resources listed in the *Garden Design* guide to learn the water needs of different plants.

Build absorbent soil with compost and mulch. Good soil stores more rain and irrigation for plants. See the *Soil* and *Mulch* guides for details.

Create irrigation zones that match the sun and wind exposures around your garden. Strong winds and direct sun can rob plants of moisture. Water plants in these conditions separately from plants with lower water needs.

Grow practical lawns. Keeping lawns green can take a lot of work and water. To minimize lawn maintenance.

- **Don't create narrow lawn strips** that are hard to water and mow efficiently.
- **Don't plant lawn on steep slopes** that are hard to water without runoff.
- **Plant shade trees on south and west sides of lawns** to cut water use.

RESOURCES

Catalogs for drip irrigation equipment available at home and garden centers have good information on designing and laying out systems. Or request catalogs from mail order suppliers such as Dripworks, 800-522-3747; The Urban Farmer, 800-753-3747; or DIG, 800-322-9146.

Drip Irrigation for Every Garden in Every Climate, by Robert Kourik.

Sunset Sprinkler & Drip Systems: The Right System for Your Yard, Step-by-Step Sprinkler Installation, Building Effective Drip Systems

Bellevue's Natural Lawn and Garden website
www.bellevuewa.gov/natural_lawn_intro.htm

Bellevue's *Natural Gardening Guides*
Composting Food Scraps • Composting Yard Trimmings • Drip and Soak • Fertilizer • Garden Design • Lawn Alternatives • Lawns • Mulch • Pests, Weeds, and Diseases • Plant Right • Seasonal Calendar • Soil • Watering
For copies, visit Bellevue's Natural Lawn and Garden website *(above)* or call Bellevue Utilities at 425-452-6932.

The Garden Hotline
www.gardenhotline.org or 206-633-0224

Natural Yard Care Neighborhoods
www.naturalyardcare.info

Cascade Water Alliance
www.cascadewater.org

CITY OF BELLEVUE WASHINGTON

Local Hazardous Waste Management Program in King County, Washington

Brought to you by the City of Bellevue with partial funding from the Local Hazardous Waste Management Program of King County

Alternate formats available: Voice 425-452-6800 or TTY relay: 711.

Printed on 100% post-consumer recycled-content paper.
2/2011