



The Homeowner's Guide to Landscape Irrigation



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Most homes have irrigation systems installed to provide supplemental water to the landscape when rainfall is insufficient. There are important benefits to having an efficient irrigation system:

- provides a healthy landscape
- targets water to the intended plant material
- creates a softer environmental footprint by saving on herbicides, insecticides and fertilizers
- limits water runoff from landscapes
- saves money on utility bills

Automatic irrigation systems deliver the right amount of water at the right time when properly programmed and maintained. Efficient irrigation systems

- have watering schedules that account for climate and site conditions, such as: slope, plant type, sprinkler type, soil type and sun exposure.
- operate at correct water pressures according to manufacturer specifications.
- provide uniform water coverage to the landscape.
- use appropriate sprinkler types or drip emitters for the irrigated area.

Plant right

It's easy to conserve water by making simple changes to the way you plant and manage your landscape:

- **Landscape to suit your lot.** Choose grasses and plants that have low water requirements and thrive in your local climate. Consider your lot's exact features, including sun and shade, dry and damp areas, plant size, and how you plan to use each section of your yard.
- **Keep soil healthy.** Before planting, have the soil tested by the Cooperative Extension Service in your state. When planting, turn and cultivate the soil and add soil amendments to improve soil moisture infiltration and retention. This practice results in healthier plants with strong root systems that require less frequent watering. It's also a good idea to aerate your lawn and around trees at least once a year to improve water penetration and encourage root growth.
- **Mulch plants, shrubs and trees.** Using two to four inches of mulch dramatically decreases evaporation, keeps soil temperatures moderated, improves water penetration and controls weeds that compete for water.
- **"Hydrozone" your yard.** Grouping plants with similar moisture needs makes it easier to prevent overwatering in the landscape. Provide separate irrigation zones for lawn and shrub areas that have different water requirements.
- **Plant in spring or fall.** Avoid summer planting, since hot temperatures require more water for plants to become established.
- **Save grass for functional areas.** Plant grass in play zones and other areas where it will be used and enjoyed. Instead of planting turf on steep slopes or other hard-to-water spaces, consider ground cover, perimeter plants or mulch. Plant turfgrass that is best adapted for your region.
- **Plant shade trees.** The shade cast by trees creates natural "air-conditioning," lowering air and soil temperatures, and decreasing the loss of soil moisture. During the tree selection process, check tree recommendations from your state's Cooperative Extension Service or local water agency.

- **Maintain your yard regularly.** Follow a recommended year-round landscape maintenance schedule for your area. Weed, prune, fertilize and mow as needed. Raise the height of the mower during hot months to decrease water evaporation and encourage deeper roots.

Invest in an irrigation system

Using an automated irrigation system is a convenient way to keep your lawn and landscape beautiful and healthy. When operated properly and the correct irrigation components are used, an irrigation system can be very water efficient. A well-planned design is one that is flexible and able to evolve as the landscape matures. Keep the following in mind when considering an irrigation system:

- **Hire professionally.** Even the best irrigation system won't perform well if installed incorrectly. When looking to hire a designer or contractor, always get multiple bids and ask for certifications, references and insurance certificates. Use a licensed irrigator in states where a license is required or certified individuals from The Irrigation Association. Go to the IA website to [find a certified professional](#).
- **Use components that provide flexibility.** Different plants have different watering needs, and these needs may change over time. Your system should allow you to apply the right amount of water for each type of plant by the most effective method.
- **Consider drip irrigation.** Installed correctly, drip irrigation can dramatically increase water use efficiency. Do-it-yourself attempts at conversion from spray irrigation to drip are often not successful. Consider contacting a professional irrigation contractor for drip conversion retrofits. **Think smart.** "Smart" irrigation controllers automatically adjust watering amounts and frequency based on rainfall, soil moisture, evaporation and plant water needs. Several types are available, including those with on-site sensors or those with Wi-Fi connectivity. *Smart controllers are smart when programmed correctly.* To maximize the benefits of a smart controller, consult with a professional for correct programming of the product.
- **Look for the WaterSense label and for products that have been SWAT tested.** Purchase smart irrigation controllers that have the EPA WaterSense label or have been tested by third party agencies through the Irrigation Association's SWAT program (www3.epa.gov/watersense/product_search.html?Category=5 and www.swatirrigation.org).
- **Check water pressure.** Low or high pressure seriously affects sprinkler performance. Choose sprinklers based on the water pressure on your site. Pop-up sprays operate best at 30 psi, while residential gear-drive rotors operate best in the 40 – 50 psi range. If you have low water pressure, an irrigation professional will find the right combination of solutions to water the landscape properly.
- **Regulate pressure.** Excessively high water pressure increases irrigation output (gallons per minute) by up to 40 percent, causing misting and excessive water runoff. There are several solutions to regulating high pressure with the installation of: a pressure-reducing valve for the entire irrigation system, pressure-regulated spray or rotors, and pressure regulators on individual zone valves. Pressure issues should be handled by a professional.
- **Buy quality products.** Quality components will minimize future maintenance and total lifetime cost of your system. Check product warranty, too.
- **Meet code requirements.** Include the correct backflow prevention device for your area as required by the local Plumbing Code. Backflow prevention devices prevent irrigation system water from contaminating the drinking water supply.
- **Dig deep.** Install irrigation pipe deep enough to protect them from damage from aeration and other lawn maintenance. Mainline depth will vary according to local practices.

- **Don't mix and match rotors and sprays.** Gear-drive rotors apply approximately one-half inch of water per hour, while fixed spray nozzles apply two to three times that amount. Assure that nozzles in a zone have matched precipitation rates.
- **Look for savings.** Many water utilities offer rebates for high efficiency nozzles, pressure-regulated sprinkler heads, sprinkler check valves and smart controllers. Before taking advantage of rebates, consult with a professional irrigation contractor to determine which products will enhance the efficiency of your irrigation system.
- **Adapt watering to the season.** Invest in a smart controller that can make changes automatically to the watering schedule. Familiarize yourself with the settings of the irrigation controller. If you choose a "standard knob and dial controller," learn how to make percent watering adjustments for each month of the year.
- **Get in the zone.** Schedule each individual zone in your irrigation system to account for plant type, type of sprinkler, precipitation rate, sun or shade exposure, slope and soil in that section. Different zones will almost always need different watering schedules.
- **Consider soil type.** The type of soil determines how quickly water can be absorbed without runoff. Watering more than the soil can absorb causes runoff and waste.
- **Don't send water down the drain.** Set sprinklers to water plants, not your driveway, sidewalk, patio or buildings. Consider microirrigation for narrow landscaped areas.
- **Water only when needed.** Let the soil dry out between irrigation events. Watering too much and too frequently results in shallow roots, weed growth, disease and fungus. Take advantage of soil moisture sensors that wire into the controller. When approximately 50 percent of the water is depleted in the root zone, only then will the irrigation run a full cycle.
- **Water at the best time.** Watering during the heat of the day may cause losses due to evaporation. Prevent water loss by watering when the sun is low or down, winds are calm and temperatures are cool — typically during the very early morning hours before sunrise is the best time.
- **Use "cycle and soak."** To reduce runoff, set your system to run for three, 5-minute intervals for 15 minutes at one time, allowing water time to soak into the soil. Shorten cycle times as needed to keep water on the landscape.

Maintain & upgrade your system

Irrigation systems need regular maintenance to keep them working efficiently year after year. Damage from lawn equipment or improper winterization can cause leaks and other serious problems. Follow these guidelines to avoid problems:

- **Inspect your system monthly.** Check for leaks, broken or clogged sprinkler heads, and other problems. Clean clogged screens and microirrigation filters as needed.
- **Adjust sprinkler heads.** Remove or correct obstructions that prevent sprinklers from distributing water evenly. Adjust sprinkler head positions and spray patterns to avoid watering sidewalks or structures and to provide necessary clearance over growing plants.
- **Check the pressure.** Pressure can change over time and negatively affect system efficiency. Use pressure regulation when installing microirrigation systems.
- **Install rain, freeze or soil moisture sensors.** These sensors can be wired to any controller and help compensate for natural rainfall by turning off your system in rainy or freezing weather or when soil is sufficiently wet.
- **Update your smart controller.** Climate or soil moisture sensor-based controllers evaluate weather or soil moisture conditions and then automatically adjust the irrigation schedule to

meet the specific needs of your landscape. For a list of smart controllers, check out the EPA WaterSense labeled controllers at:

www3.epa.gov/watersense/product_search.html?Category=5. SWAT performance reports can be viewed at www.swatirrigation.org. Some smart controllers have on-site sensors, while others are signal based and can connect via Wi-Fi technology.

- **Consider microirrigation for beds, gardens, trees and shrubs.** Drip irrigation, microsprinklers and bubblers apply water at a much slower rate than spray irrigation. Microirrigation decreases evaporation, runoff and overspray.
- **Consider subsurface drip irrigation for beds and lawns.** Some dripline products are designed to be installed within the root zone of shrubs or turfgrass. These products apply water directly to the root zone while protecting against root intrusion into the emission points. An irrigation professional will select the right spacing and dripline output for your soil and site.
- **Look for savings.** Many water utilities offer rebates for certain water-efficient products. Before upgrading or installing a system, consult with your local water provider.
- **Winterize in colder climates.** An irrigation contractor with specialized equipment will blow out water that could freeze and crack backflow prevention devices, pipes, valves and sprinklers.

Hiring an irrigation contractor

Your irrigation system is only as good as the individual who designs and installs the system. This is why it is critical to select a contractor that

- has specialized understanding of irrigation principles, technology and techniques.
- understands local environmental conditions and can help you choose low water plants and grass that will flourish in your climate and lot.
- will ensure your system complies with local building codes for licensing, backflow prevention, installation and more.
- has knowledge of all the different smart irrigation products on the market and has a willingness to install them.
- is willing to train you on how the system works.
- provides a plan showing where key components are installed.

No matter how small or large your project, always get multiple bids, check references and confirm your preferred vendor is properly insured.

[Find a certified professional](#) for your irrigation project. These include certified irrigation technician, certified irrigation contractor, certified landscape irrigation auditor or certified irrigation designer. Let your motto be: "Hire Certified."