
WATER-SAVING TIPS

FOR YOUR LAWN AND GARDEN



SAMPLE





WATERING YOUR LAWN

Creating a vibrant landscape doesn't have to drain your bank account. By optimizing your irrigation system and paying close attention to soil health and plant selection, you can have a landscape that not only thrives but also requires significantly less water. Over-watering can lead to a higher water bill, increased fertilizer and pesticide use, and runoff that pollutes local waterways. Spending the time to understand your lawn's water needs and program your irrigation system can lead to big reductions in water use.

UNDERSTANDING WHAT YOUR LAWN NEEDS

Before deciding how to improve your lawn and garden, it's essential to understand its current health and water requirements.

Assess current health: Look for signs of stress, such as yellowing grass or bare patches, that may indicate underlying issues.

Evaluate water needs: Consider how much water your lawn currently uses. If you notice excessive watering or runoff, adjust settings and watering cycles to prevent over-watering.

Soil needs: Conduct a soil test to determine its composition and nutrient levels. This analysis will reveal whether your soil requires amendments, such as compost or specific nutrients, to support a thriving lawn.

Pest control needs: Identify any pest issues that can be controlled with thoughtful irrigation practices to reduce pesticide use and time spent dealing with pest problems.



HOW MUCH WATER DOES YOUR LANDSCAPE NEED?

Different parts of your lawn and garden may need different amounts of water. Determine the needs of each part of your lawn and garden and start delineating irrigation zones based on your plants' needs.

The average turfgrass landscape requires about an inch of water a week, but your plants may have different needs, depending on your climate. Test your system by setting a few small containers (use cans with flat bottoms and smooth sides like tuna cans) around the lawn and noting how long it takes for them to collect a half inch of water. Run that cycle twice a week and see how your lawn and garden respond.

If water is starting to pool, it means that you're watering more than the soil and plants can absorb. That can lead to fungal and other plant diseases as well as pest problems.

Don't water the pavement: Watering the driveway will waste water and cause stormwater pollution. Prevent this by adjusting the direction and pattern of your irrigation nozzles.

Raining: Skip a cycle. Let the rain do the work for you and save water. Consider incorporating rain sensors into your system; they'll automatically make the adjustments for you.

Seasonal adjustments: Your lawn needs more water during hot, dry months than during cooler months. Adjust your watering schedule seasonally.

Time of day: Early morning is the best time to water your lawn and garden. Less water evaporates then because it's cooler and less sunny. Avoid watering at the end of the day or during the night because lingering moisture can lead to fungal diseases.

HOW GRASS GROWS

A vibrant lawn results from a combination of good watering techniques, healthy soil, and maintenance. To get the best-looking lawn, you need to think about both what you can see and what's beneath the surface.

Healthy grass is watered deeply and infrequently. Saturating the soil with water allows the roots to grow deeper and absorb water longer, because the top part of the soil dries first. This can also be achieved through the cycle and soak method of watering landscapes that don't absorb water as quickly. When grass is watered frequently but not enough, the roots will develop closer to the surface. This will require continued frequent watering and create an environment susceptible to weeds.

SHALLOW ROOT GROWTH

Produced by frequent but insufficient watering



DEEP ROOT GROWTH

Produced by deep, infrequent watering



HOW IRRIGATION SYSTEMS WORK

Working with a sprinkler installer to design an irrigation system is a collaborative process. Your irrigation system should meet the needs of your garden. Each component should be thoughtfully placed to ensure that water reaches the right places and doesn't over-water the lawn.

Landscape drip line: Used mostly for flowers, vegetables, and container plants, these lines deliver water one drip at a time so it will reach the roots better than a spray of water from sprinkler heads would.

Sprinkler heads: Disperse water evenly across the lawn in spray, rotary, or mist patterns to ensure thorough coverage.

Pipes and tubing: Transport water from the main supply source to the sprinkler heads efficiently across the landscape.

Rain sensor: Detects rainfall and temporarily shuts off the sprinkler system to conserve water during wet weather conditions.

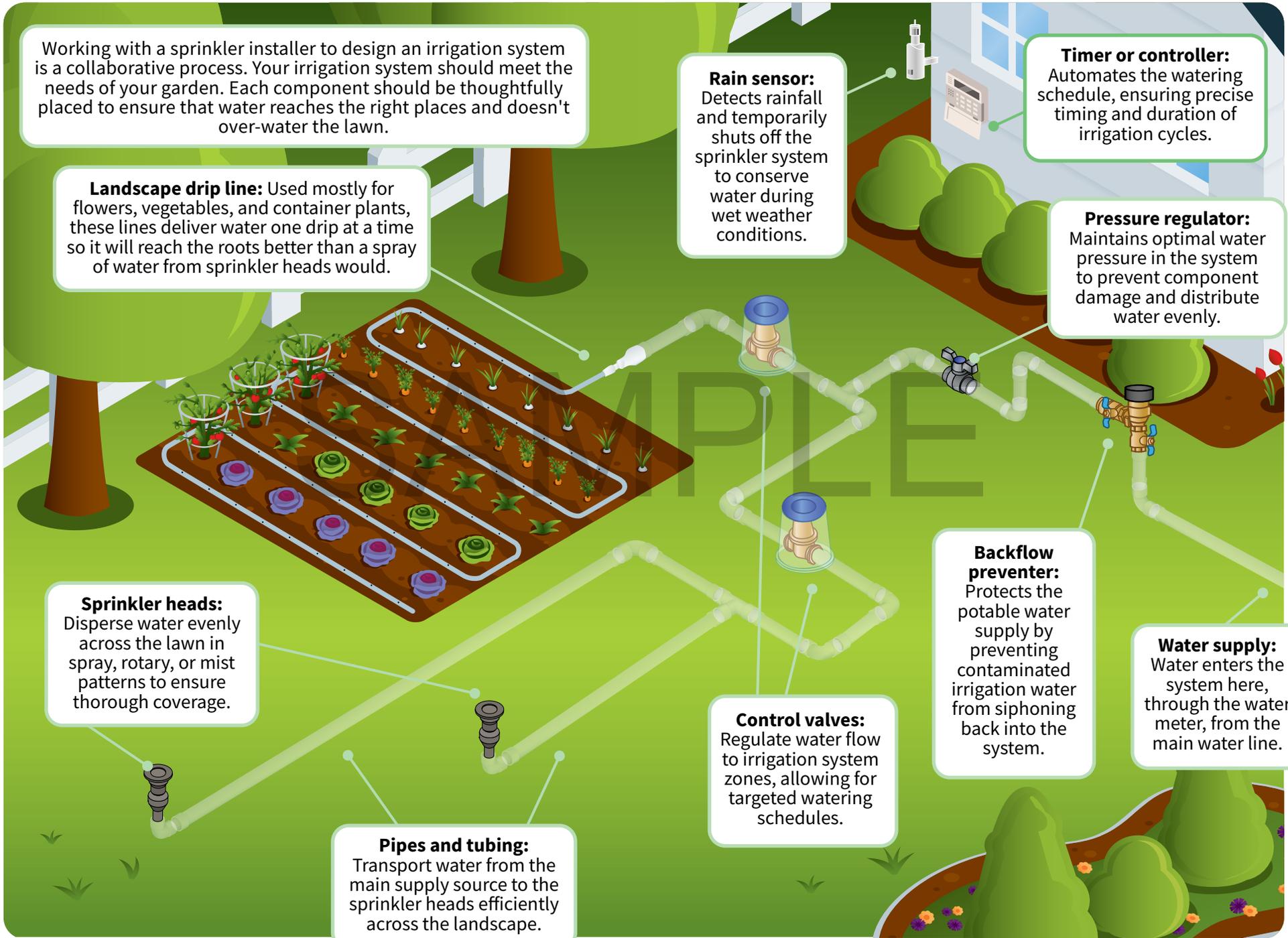
Control valves: Regulate water flow to irrigation system zones, allowing for targeted watering schedules.

Timer or controller: Automates the watering schedule, ensuring precise timing and duration of irrigation cycles.

Pressure regulator: Maintains optimal water pressure in the system to prevent component damage and distribute water evenly.

Backflow preventer: Protects the potable water supply by preventing contaminated irrigation water from siphoning back into the system.

Water supply: Water enters the system here, through the water meter, from the main water line.



CONTROLLERS

The controller or timer is the brain of your irrigation system. It allows you to set up multiple zones based on watering needs and control when and how much water is applied to your lawn or garden. More advanced controllers will reduce the amount of water you need by adjusting based on rain or soil conditions. And the controller can have a big impact. The US Environmental Protection Agency (EPA) estimates that switching from a standard clock-based controller to a WaterSense-labeled smart controller will save the average household 15,000 gallons of water a year.

Smart controllers: Instead of your having to guess or do the math on the right balance between watering cycles and rain, smart controllers do the work for you. There are two types of smart controllers: weather-based irrigation controllers that use weather data to determine the ideal watering cycle and soil-based irrigation controllers that use sensors in the soil to determine the ideal watering pattern. Determine the right one for your landscape based on the variety of zones and conditions you want the system to manage.

WaterSense: WaterSense is an EPA program that evaluates products for water conservation and performance. WaterSense-labeled products use at least 20% less water than regular models. Look for the WaterSense label when purchasing controllers or spray sprinkler bodies.

Read the manual: No matter what type of controller you have, familiarize yourself with the settings to help your garden thrive and avoid wasting water. Look for settings like rain-delay buttons that let you turn off the system on rainy days and sunlight sensors that make adjustments for days with high evaporation levels. Don't rely on your irrigation contractor to set your controller. If it needs to be adjusted or reset, it's valuable to know how to set it yourself.

Backup: Make sure your controller has a functional backup battery to reduce the chance that you'll need to reset it after a power blip or outage.

TYPES OF CONTROLLERS

Standard controllers: Economical and easy to use, these must be set and adjusted manually.

Smart controllers: These allow you to control and adjust your irrigation from your phone or computer.

Weather-based controllers: These smart controllers use local weather and landscape conditions to adjust the amount of water applied to your lawn or garden.



Soil moisture-based controllers: This type of smart controller relies on sensors in the soil to determine whether your lawn is getting enough moisture.



IRRIGATION ZONES

Irrigation systems should be divided into zones based on the amount of water each section of your lawn and garden needs. Each zone will have a group of sprinklers that provide the same amount of water so the entire zone is watered evenly—this is called “matched precipitation.” Each zone is controlled by its own valve, so the zones can run independently of each other. There’s a practical reason for this: the amount of water supplied to your system isn’t enough to allow the entire system to run at once. There’s also a water-saving benefit: different zones can receive different amounts of water, which allows you to optimize your watering. For example, a section of the lawn in shade will require less water than a section in the sun all day where the water evaporates more quickly.

It’s important to work with your installer to determine the right number of zones. Too few and your system won’t be able to meet the needs of your lawn or garden. The number of zones will be based on the water source and your watering needs. Six to nine is a typical number of zones for many lawns.

Create a zone chart: It’s important to track your zones and sprinkler settings. You may need to reprogram a controller after an outage or adjust watering based on a lawn’s needs, and keeping a chart of zones and programming settings will ensure that you have vital information on your system.

Cycle and soak: If areas of your lawn or garden, such as steep slopes or clay soil, take longer to absorb water, a normal watering cycle might lead to wasting water and runoff. To address this, run the irrigation system in shorter intervals with breaks to allow the water to soak into the soil. This practice is commonly referred to as “cycle and soak.” To set a cycle-and-soak irrigation schedule, reduce the run times of your existing zones by half, then add a second start time on that program. Allow breaks of 30 minutes to an hour between cycles.

SPRINKLER TYPES

One of the advantages of breaking your lawn and garden into zones is that it allows you to use different sprinkler types to achieve optimal watering of different areas. Here are the most common types of sprinklers:



Rotor:

Use gears to quietly rotate the head and cover large areas efficiently.



Adjustable-arc nozzles:

Emit rotating streams of water, providing uniform coverage and reducing water runoff.



Spray-head sprinklers: Distribute water through a fixed spray pattern suitable for smaller areas and closely spaced plants.



Bubbler sprinklers: Deliver water directly to the base of plants, which is ideal for trees and shrubs that require deep watering.



Drip irrigation:

Provide a slow, consistent trickle of water directly to plant roots.

DO A SYSTEM WALK-THROUGH

Spotting problems with an irrigation system and making timely repairs keeps lawns healthy and saves water and money. The EPA recommends using this checklist to conduct periodic checkups on your system.

Issue	Description	How to Check	What to Do
Leaks	Leaks can occur at irrigation valves, connection points, joints, and sprinkler heads or drip irrigation lines.	Walk through the landscape while the system is running and look for water pooling on the surface or water spraying where it shouldn't.	Flag the location of each leak or break and contact an irrigation professional.
Broken or missing sprinklers and drippers	Pedestrians or machinery can damage irrigation components. Damaged sprinklers can cause water to go where it shouldn't.	Run a test of the system and look for missing sprinklers, those that don't pop up fully, drip lines that have been cut or moved out of place, or small geysers.	Flag the broken component and contact an irrigation professional.
Sprinklers aimed incorrectly	Sprinklers pointed toward walls and hardscapes miss the landscape and waste water.	Look for sprinklers that over-spray or spray water onto areas outside the landscape. Tilted and/or sunken heads cause similar problems.	In most cases, you can turn the nozzle to face the correct direction, but if you can't, flag it for a pro to fix.
Poor sprinkler coverage	Poor coverage can cause over-watering in some areas of the landscape and dry spots in others.	Observe the distance of spray from one sprinkler to another; spray from one sprinkler should reach the adjacent one (this is called head-to-head coverage).	Adjust the spray distance and direction of the nozzle to ensure head-to-head coverage or contact an irrigation pro; sprinkler heads may need to be added or moved.

Issue	Description	How to Check	What to Do
Misting	High pressure can cause misting that's easily blown away by wind and not used by the landscape.	Look for a fine mist coming from sprinklers.	Ask your irrigation professional to check the water pressure.
Bad dripper spacing in your micro-irrigation system	Microirrigation drippers should be placed near the root zone of each plant.	Look for drippers that are on bare soil or not right next to plants.	Move the drip line to the root zone of the plants.
Irrigation schedule not adjusted for the seasons	Plants' water needs change with the season, and the schedule should as well.	If you use a weather-based controller, it should be set to weather-based mode. If it's a timer, you should have a seasonal schedule to follow.	Select the weather-based mode on the controller if available, or, for timers, post or set a reminder to change the schedule as the season changes.
Runoff	Using run times that are too long or frequent, or irrigating after rain, can keep water from infiltrating the soil.	Check for pooling water or runoff after irrigation.	Shorten run times, increase the time between them, or consider a weather-based or soil moisture-based irrigation controller.
Soil moisture sensor (if used) is not fully buried	The soil moisture sensor should be buried deep enough in the soil to obtain accurate readings.	Where the sensor is buried, look for soil that's been removed, exposing the sensor.	Contact a certified irrigation professional to reinstall and check for damaged wires where applicable.

If you identify leaking pipes, broken sprinklers, or inefficient irrigation schedules and need help fixing them, look for an irrigation professional.

Source: www.epa.gov/watersense/sprinkler-spruce-up.

DESIGNING A WATER-EFFICIENT LAWN

Improving your irrigation system is an important way to conserve water. You can conserve even more by thoughtfully designing a water-efficient lawn. By selecting the right grass, improving soil quality, and incorporating water-wise plants, you can achieve a beautiful lawn that conserves water.

Choose plants that thrive in your environment: Selecting plants that are native or adapted to your region makes it less likely they'll need large amounts of water to thrive.

Hydrozone: Arrange plants and grasses with similar water needs into irrigation zones to allow for optimal watering.

Select the right grass: Choose a grass variety that suits your climate and requires less water. Consider drought-tolerant options that thrive with minimal watering. Research the water needs of cool-season and warm-season grasses in your climate to determine which will be the best fit for your lawn.

Improve soil quality: Healthy soil retains moisture better, reducing the need for frequent watering. An inexpensive soil test can help you make amendments to improve your soil quality.

Mulch to conserve water: Apply a layer of mulch around your plants to help retain moisture and regulate soil temperature. Mulch reduces evaporation, keeping your lawn hydrated and healthy with less watering.

Reduce lawn size: Consider reducing the size of your lawn by incorporating other landscape features, such as flower beds, pathways, or patios. These elements add visual interest while decreasing water usage.

LAWN MAINTENANCE

Regular and thoughtful maintenance will support the success of your lawn and your irrigation system.

Mowing technique: To promote healthy growth and reduce water evaporation, mow your lawn at the appropriate height for the type of grass you have. Leaving grass longer shades the soil and retains moisture, cutting down on watering frequency. Many public utilities offer free assessment and educational audits for homeowners. Check with your local water supplier to see if they're available in your area.

Aerate for root growth: Aerate your lawn periodically to improve soil aeration and root growth. This practice allows water, nutrients, and air to penetrate the soil more effectively, supporting healthy turf.

Fertilize wisely: Use fertilizers sparingly and choose slow-release or organic options. Over-fertilizing can lead to excessive growth, increasing your lawn's water requirements and maintenance needs.

Engage with the community: A community of garden enthusiasts and eco-conscious homeowners can provide valuable insights and support for creating a water-efficient lawn. Connect with fellow gardeners to exchange tips and experiences on sustainable lawn practices. Learning from others can inspire new ideas for your lawn and new approaches.

Consult your cooperative extension center: Located across the country, cooperative extensions provide expert resources on gardening in your area and climate. In addition, many offer low-cost soil tests and other resources for maintaining a successful garden.

Leave the clippings: After you mow, leave the grass clippings on your lawn. They will help retain moisture and provide nutrients to the soil.

Check for incentives and rebates: Many state and local governments offer incentives to reduce water use on lawns.



RESOURCES

Visit these sites for more information:

EPA WATERSENSE

www.epa.gov/watersense

NATURAL RESOURCES CONSERVATION SERVICE

www.nrcs.usda.gov

NATIONAL INSTITUTE FOR FOOD AND AGRICULTURE

www.nifa.usda.gov

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