

# Homeowner Water Guide

## Efficient Irrigation

Irrigating a landscape is a method of providing water to plants that they need to survive drought conditions and thrive. Knowing how much water to provide and when is important to achieve the right balance between keeping your water use low, and maintaining a healthy, resilient landscape. Different methods are available to irrigate your landscape, and you need to be sure that you choose the most efficient and cost effective method for your property.

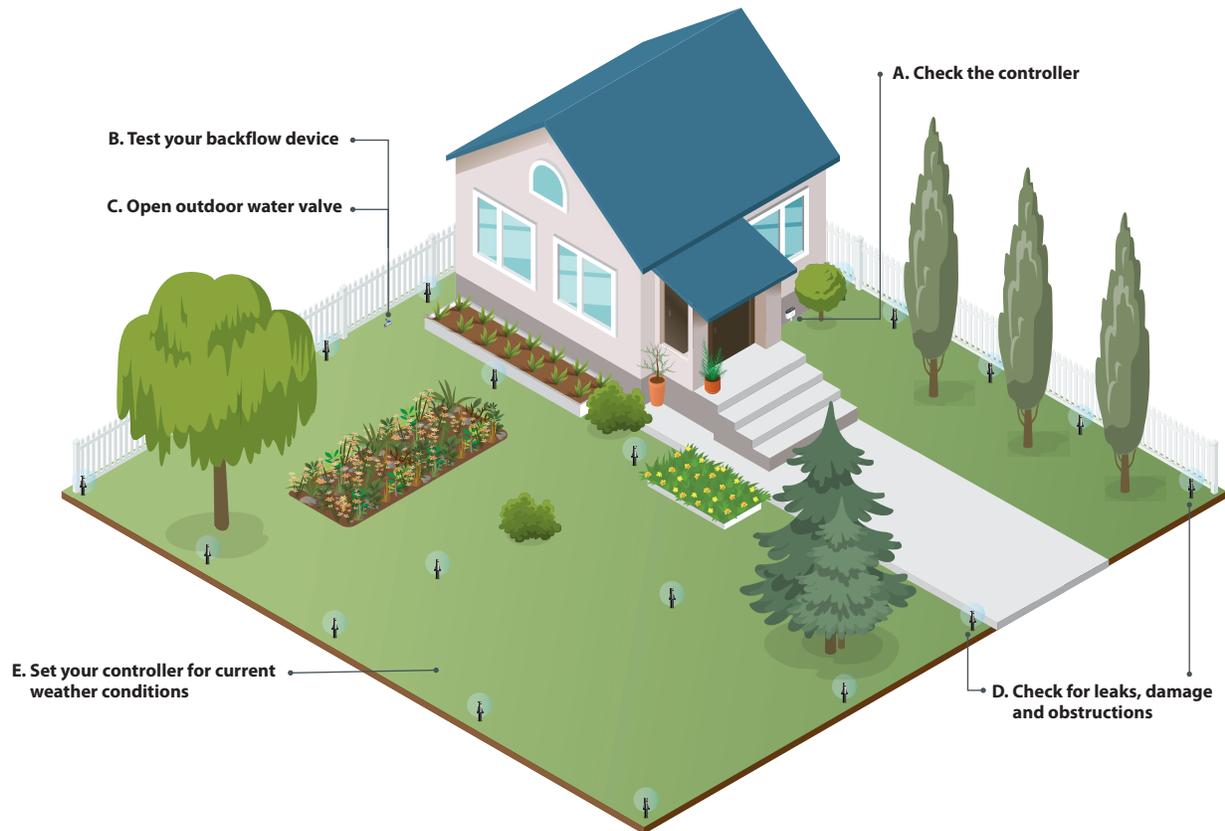
Irrigating your landscape can be done two ways: **manually** or with an **automatic irrigation system**.

**Manual irrigation** is easily done using a garden hose attached to a sprinkler, watering wand or spray nozzle.

While this method can be more water efficient and cost less than an automatic system, it can be very time intensive – especially if you have a large property. For more information on manually watering your landscape, read the Homeowner Water Guide – Watering 101.

**Automatic irrigation system** is a series of pipes and water distribution devices located on the soil surface or just below ground that is connected to a water supply and is operated by an automatic controller. Automatic irrigation includes surface spray irrigation in which sprinkler heads and rotors are used on turf areas, and drip irrigation which is a network of small tubes irrigating the root zone of plants. Automatic irrigation systems can be an easy, effective way to water your landscape - provided the system is properly installed and maintained. If not properly installed and maintained, this method can be less water efficient and cost more to operate. Since we pay for all the water we use in our homes – including outdoor use – homeowners should ensure that whichever system they use is properly cared for throughout the summer months.





## Maintaining your system

Automatic irrigation systems need regular maintenance to keep them working efficiently and effectively each year. Maintaining your irrigation system will reduce wasted water and overwatering, improve plant health, keeping your yard healthy and beautiful. Wasted water and overwatering costs more money and can result in the shortening of your plants' root systems (trees, shrubs and grasses) making them less resilient to dry conditions.

**Automatic irrigation systems can be complex – it is always recommended to hire a certified irrigation professional to ensure system maintenance is done correctly. Visit [irrigation.org](http://irrigation.org) to find local, certified professionals.**

### Start fresh in the spring

- A.** Turn on your timer/controller before operating the system for the first time. Check the battery and wiring for any loose connections.
- B.** Test your backflow device each year before you start using your system. This must be done by a certified cross connection tester.
- C.** Open your outdoor water valve located in either the mechanical room, furnace room or outside, as well as your master valve for the irrigation system
- D.** Check for leaks or damage to the system and have them repaired by a certified professional.
- E.** Ensure the controller is scheduled appropriately for the current weather conditions. Check your controller instruction manual to ensure you are making the right schedule modifications for your equipment. Consider using a 'cycle and soak' schedule to allow for maximum water absorption and minimum run off. Instead of running the system for one longer period of time, set up the controller to operate the system at two, shorter start times (cycle), with a 30 minute break (soak) between. This allows the water to penetrate deeper into the root zone of the plant, creating stronger, healthier grass, that doesn't need to be watered as often, and reduces runoff created by applying too much water at a single time.



## Inspect your system monthly

- Look for leaks, broken or clogged sprinkler heads and any other problems that can occur while the system is in use.
- Check your controller and change the schedule to reflect the needs of the landscape as the weather changes throughout the season. When correctly adapting your watering schedule to the season and weather conditions, this will ensure you are seeing water savings during times when watering is not necessary.

## Winterize your system in the fall

- Turn off your outdoor water supply and controller, and ensure lines and low spots are empty of water.
- Book a sprinkler winterization with your certified irrigation professional.

## Did you know?

All homeowners must do their part to protect our drinking water supply. All automatic irrigation systems are required to be protected from backflow by installing approved cross connection control devices in accordance with the National Plumbing Code and the Water Utility Bylaw 40M2006. When starting up your irrigation system each spring, ensure you are in compliance by getting your cross connection control device tested by a certified cross connection tester.

Go to [calgary.ca/crossconnections](http://calgary.ca/crossconnections) to find more information and local, certified testers.

## Knowing your system

**Automatic controller** is a timing device that sends an electric signal to valves, telling them when to open and close as per a set irrigation schedule.

**Smart controller** is an irrigation control system that uses weather-based calculations and environmental conditions to determine how much water to apply to a landscape based on plant water needs.

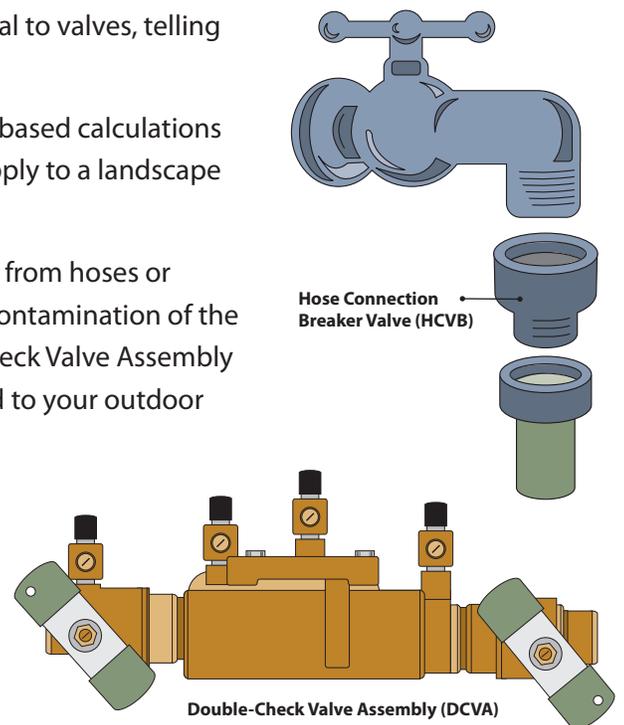
**Cross connection control device** that stops the backflow of water from hoses or irrigation systems into public drinking water systems, preventing contamination of the drinking water supply. For in ground irrigation systems, Double-Check Valve Assembly (DCVA) are required, and for manual irrigation with a hose attached to your outdoor water supply, use a Hose Connection Vacuum Breaker (HCVB).

**Surface spray irrigation** refers to an irrigation system that distributes water through the air over a large area, such as turf, using spray or rotor sprinklers.

**Drip irrigation** refers to any irrigation system that applies water directly to the root zone very slowly. Currently, this technology is the most efficient from a water and energy use standpoint.

**Master valve** is the main valve for the irrigation system. When this valve is closed water will not be supplied to the irrigation system.

**Hose timer** is a device that attaches to your outdoor faucet and automates manual watering.



## Find out if your in-ground irrigation system is working properly

1. Place several small containers evenly between each of your sprinkler heads (tuna cans and frisbees work well).
2. Turn the sprinklers on for 10 minutes.
3. Measure the amount of water in each container. Differences in the amount of water collected in each container indicate uneven water distribution over the test area.
4. Make the required adjustments or repairs to your sprinkler heads or contact a certified irrigation professional to make repairs.

## Finding leaks and understanding outdoor water use

Automatic irrigation system leaks can occur as a result of improper system installation, damage from construction, changes in weather (freeze and thaw), and improper, or lack of winterization and maintenance. Leaks should be identified and repaired as quickly as possible because they can add up quickly on your monthly water bill – a break in an underground irrigation line can waste up to 1,200 m<sup>3</sup> in a month.

### One hour – Approximately 950 litres/hour = 1 m<sup>3</sup>

This water use could increase your bill by \$3.15 each month.

### Three times/week for one hour each 11.5 m<sup>3</sup>

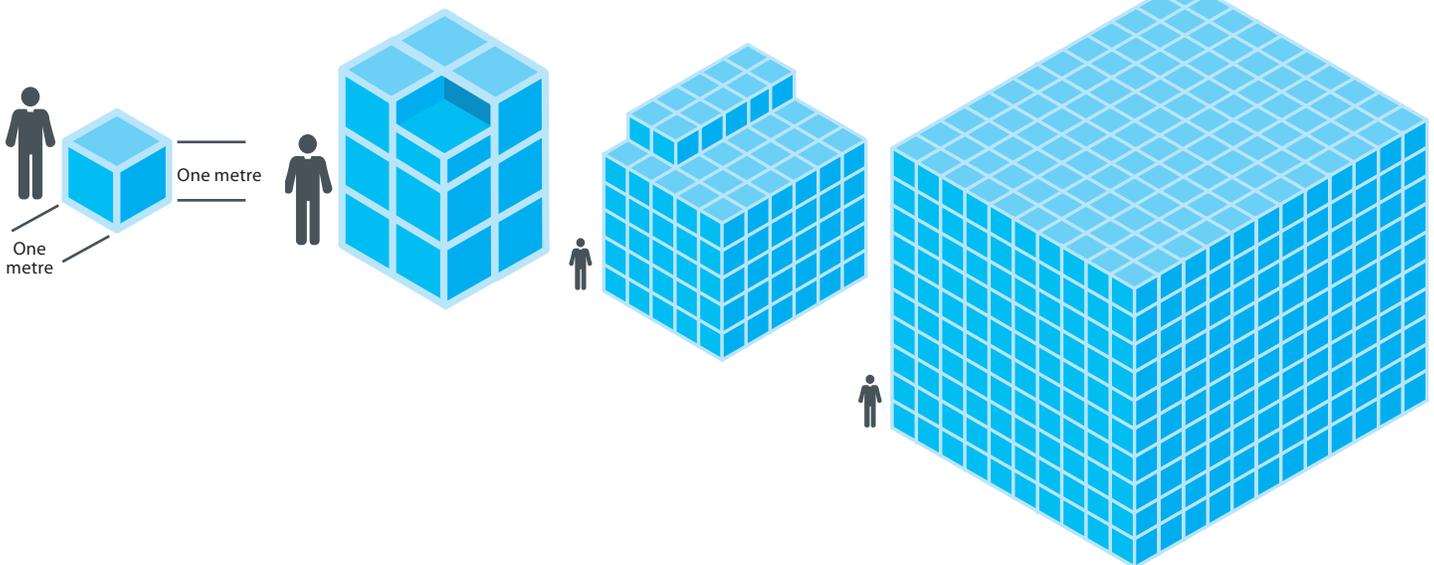
This water use could increase your bill by \$36.23 each month.

### Oops. Hose left running for a week 160 m<sup>3</sup>

This water use could increase your bill by \$507.03 each month.

### Large flow – Complete break in underground irrigation line can waste 1,200 m<sup>3</sup>/month

This water use could increase your bill by \$3,780.48 each month.





- Look for indications of a leak.** Like other household leaks, irrigation system leakage can often go unnoticed. However, there are a few things you can look for that will help you spot one. Look for an unexplained increase in your water bill, poor system performance, dry spots, soggy spots, overgrown areas of turf or an unexplained hissing sound.
- Inspect system** for broken or clogged sprinklers and other damaged components.
- Contact your certified irrigation professional** with help in identifying and repairing leaks and to ensure that your system is operating properly.
- Track your water use.** Check your water bill every to understand how your water use changes in the summer. Compare your average monthly water use over the winter months, to the months you are using water outdoors in the summer. The difference between summer and winter consumption is the volume of water that you are using outdoors. To compare to previous year, look at past bills, or at the historical water use graph at the top of your water bill to get a year over year comparison.

## Irrigating efficiently

- Wipe out overwatering.** Look for signs that your lawn is being overwatered: water is puddling, soil is soft and mushy, mushrooms appear and the lawn a musty smell. Grass benefits from deep watering less often. Thoroughly soak the root zone and then let the soil dry completely. This will ensure deeper roots, allow the lawn to be healthier and more tolerant of drier conditions
- Adapt your watering schedule for the weather and the season.** If you are irrigating manually, take note of the weather and make sure you are not watering if it has rained in the last few days. If you have an automatic system, familiarize yourself with the settings on the irrigation controller and adjust the watering schedule regularly. During cooler periods, and typically in the spring and fall, reduce the frequency of watering, and allow the soil to dry completely between watering.



- Water early in the morning between 3 to 7 a.m.** This will reduce water lost to evaporation during the heat of the day and when there is more wind.
- Check sprinklers and sprinkler heads for maximum efficiency.** Always make sure that manual sprinklers and sprinkler heads (with automatic irrigation systems) are watering the landscape and not hard surfaces such as driveways and sidewalks. Regularly check automatic systems to make sure sprinkler heads pop up correctly, spray evenly, and are free from damage or clogging or blocking vegetation.
- Use a hose timer.** With manual irrigation, sprinklers and hoses can inadvertently be left running long after it's applied the right amount of water, leaving you with a soggy lawn and an increased water bill. Use a hose bib timer to ensure you are watering the right amount, at the right time.
- Reduce run off by watering low and slow.** Be sure to keep the manual sprinkler height low, and that the water pressure is low to avoid misting. Soil can only absorb so much water at once, so keeping the water low, and applying it slowly, allows water time to infiltrate into the soil and get to the root zone rather than just applying water to the surface.
- Know how to manually override** (shut-off) your irrigation system for windy or rainy days.
- Test your soil's moisture level.** Purchase a soil moisture probe with a read out or use a long screwdriver. If it's easy to push the screwdriver in, the soil is still moist and it is unlikely to need any more water. If the soil is very dry it will be difficult to push the screwdriver into the ground and it might be a good time to water if there is not rain in the forecast.
- Use smart technology.** Major advances in irrigation controller technology have resulted in 'smart' weather based irrigation controllers. These controllers monitor changing weather conditions and adjust watering schedules accordingly. To learn more, ask your irrigation professional if this technology is right for your landscape.

## Did you know?

Having a beautiful, healthy and resilient landscape is more than just knowing when and how to irrigate. Take the time to know your soil type and keep it healthy. Calgary and region soils are clay based and tend to drain slowly and allow water to pool. Top dressing your lawn with good quality organic-rich soil, and aerating when needed will improve the soil quality and health of the plants. Choose low water use plants appropriate for the Calgary climate and use mulch around plants, trees and shrubs, to help retain soil moisture and keep the soil temperature even. For more information on low water use plants visit [calgary.ca/yardsmart](http://calgary.ca/yardsmart) and tips on lawn care read the Homeowner Water Guide – Lawn Care. Check your local nursery for sod types.

