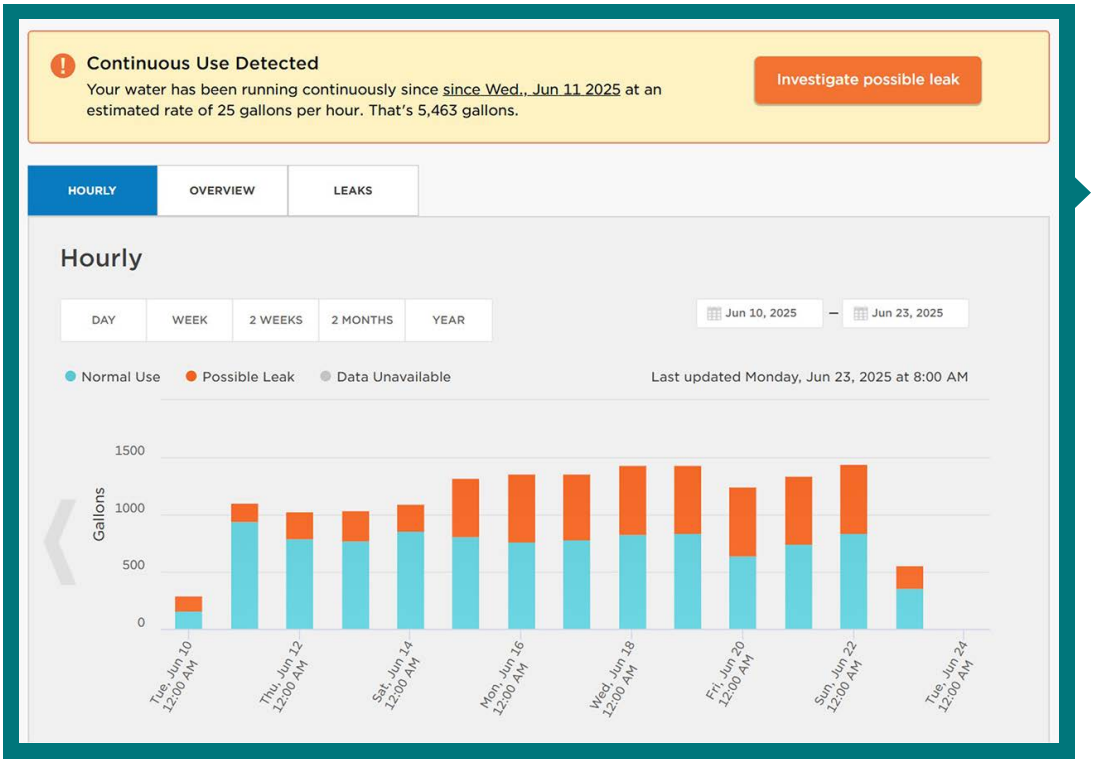
Checking for Water Leaks and Hidden Water Waste

Check the WaterSmart Portal

Thornton Water customers can use the WaterSmart portal to track water use over time. Through this online portal, you can monitor your water use data and patterns, set leak alerts, get help checking for leaks, and learn about water efficiency rebates and services.

New Advanced Metering Infrastructure (AMI) technology allows customers access to daily water use data in the WaterSmart portal to easily monitor water levels and quickly catch and repair leaks.

In the "Settings" tab, you can customize alerts from WaterSmart to alert you about high usage increases above your average use, and sign up to receive a quarterly water report and notices from the city of Thornton. While we recommend frequently visiting the WaterSmart page to familiarize yourself with your water use, the alerts are a great tool to keep you updated on sudden or unusual changes in your water use.



If you notice abnormal or constant water use in your portal, follow the steps below to quickly identify and manage your leak.

Check for Toilet Leaks

Toilets are a common source of high-water usage. They can waste thousands of gallons per month. Sometimes, you can hear a toilet leaking, but it can also be silent and difficult to detect. Here are some easy ways to test for toilet leaks.

☐ **Is Your Toilet Running? –** Do you ever have to jiggle the toilet handle to stop the toilet from running? If a toilet flapper does not seal consistently **every time** the toilet is flushed, replace or repair the flapper to prevent it from sticking open. A stuck open flapper can use 100,000 gallons in just a month!

☐ **Food Coloring Test –** Test toilets by placing five to ten drops of food coloring in each toilet tank. Wait 15-20 minutes, and if the color seeps into the bowl, there is a leak (most likely from a worn flapper). If the color does not seep into the bowl, then the toilet is not leaking during the test.

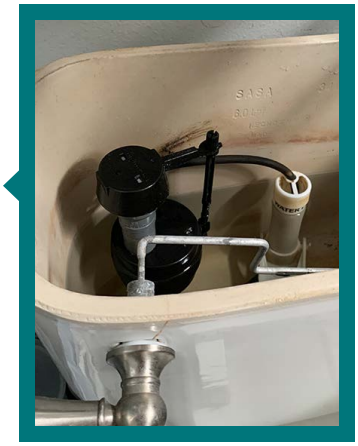
☐ **Another Test for Toilet Flappers –** The flapper valve is the rubber stopper at the bottom of the toilet tank. Flappers can become warped over time, preventing a watertight seal. To replace your toilet flapper, make sure the new one fits and seals properly, as they are not all one universal size. To check the flapper's condition:

- ☐ Turn off the toilet's water supply (usually it is near the wall at the base of the toilet).
- ☐ Mark the water level inside the tank.
- ☐ Wait 15 minutes.
- ☐ If the water level has dropped below your mark, replace the flapper. If the water level has remained the same, then the problem may be an overflow near the top of the tank involving the float ball or the fill valve. Access online resources for simple DIY repairs, or contact your local handy person or plumber for professional advice.

☐ **Check the Tank Water Level –** When the tank is full, ensure the water level stops about one inch below the top of the overflow tube. If the water level is too high, repair or replace the float valve or adjust the water level screw.

☐ **Toilet Rebate –** If you are replacing a toilet, Thornton offers a $75 toilet rebate for replacing an older toilet with a new WaterSense-certified toilet. Dual flush toilets do not qualify. Check ThorntonWater.com/Rebates for details.

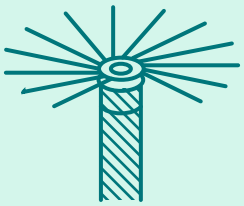
Visible color seeping into the bowl (pictured here) would indicate a leaky toilet.



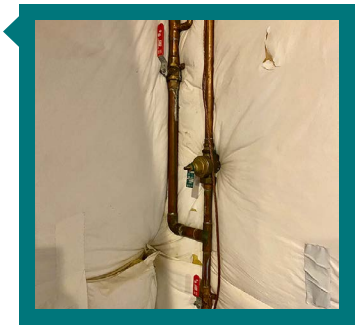
Water level should be about an inch below the top of the overflow tube.

Check Landscape Sprinkler System Components

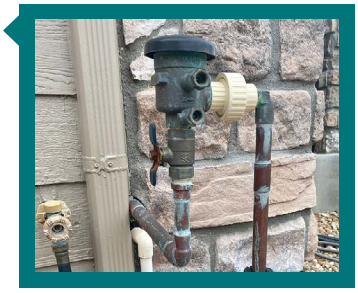
Regular maintenance of your sprinkler system is crucial. Go through each component of your system step by step. Below is some general information about sprinkler system components and common water problems that can occur with them.



☐ **Sprinkler Main Shut-off Valve –** Typically located in the basement after the main house shut-off valve. In the photo, the main house shut-off valve is located at the bottom, and the sprinkler line branches off to the higher valve to the left. In some older systems, it could be underground.



☐ **Backflow Device –** Locate your backflow device. These are typically above-ground, copper devices located on the side of your house. Is water flowing through the backflow device when the sprinklers are not in use? Put your ear right up to it. Can you hear water flowing? Does the backflow device feel cold, like water is running through it? If so, you may have a constant leak in the sprinkler main, a leak in a sprinkler valve, or a stuck-on valve or zone.



☐ **Sprinkler System Main Line –** The main sprinkler line is pressurized with water 24/7 when the backflow device valves are open. The main line runs underground from your backflow preventer to the valves in your valve boxes and can develop a constant leak over time.

☐ **Valves –** Find your sprinkler zone valve boxes and open them to look for leaks, standing water, or wet soil. Each sprinkler zone has a valve, typically located in an underground box with a green plastic lid, usually near the backflow preventer. You might need a screwdriver to open the lid. The valves and pipes in the valve box can develop cracks and leak. Valves can stop working or malfunction and get stuck open. When a valve is stuck open, it will run sprinklers or constantly weep water. Drip zones can also get stuck open and remain unnoticed for long periods.

☐ **Lateral Sprinkler Lines –** Lateral lines are the pipes that extend from the valve and send water to the individual zone sprinkler heads. Lateral lines only fill with water when the controller sends a signal to open the valve and activate that zone. A leak in a lateral line will not run 24/7 unless the valve is stuck open. If the valve is working correctly, a lateral line leak will only occur when that zone is on and running.

☐ **Sprinkler Heads or Drip Zones –** If you have a broken sprinkler head or a leak in a drip zone, it will only leak when the zone is on. Continuing to run a watering program with one broken head can waste up to 11,520 gallons of water per month.

☐ **Check Drain Caps -** If your sprinkler system has a drain to winterize the lines, make sure drains are capped when you turn on your sprinklers in the spring.

Sprinkler Controller Programming and Visual Sprinkler Check

Have you recently updated your sprinkler controller program? Is it hotter than usual? Did you add watering times or days? Has a power outage reset your controller back to a default program? Do the sprinklers come on when you are not expecting them to?

☐ **Check your sprinkler program thoroughly.** Go through each option on the controller dial and each program on the controller (Program A, B, or C, etc.). If you are not familiar with your irrigation controller, refer to the controller's manual for guidance or search for videos on YouTube on how to program your specific controller.

An irrigation schedule with excess cycles can waste thousands of gallons of water. Program your controller to maximize efficiency and replace the battery if the controller resets due to a power outage.

There are many different brands and models of sprinkler controllers, but they all have the same basic options:

- **Start Times**
- **Run Times**
- **Watering Days/ Frequency**

WIFI-enabled controllers can be easier to program and monitor using your smartphone. If you are looking to upgrade, visit ThorntonWater.com/Rebates for info about the smart controller rebate (up to $200).

Learn more about water-wise irrigation by visiting ThorntonWater.com/H2Overhaul/water-wise-irrigation.

☐ **Check Start Times –** How many start times do you have programmed? Most sprinkler controllers require only one starting time to run through the entire program (all the zones). If you are cycle and soak watering, you may have two or three start times. Remember to reduce the zone run times if you are running multiple cycles per watering day. Thornton's Water Use Rules limit lawn watering times to between 6 p.m. and 10 a.m.

Note - The only controller we have seen that requires a start time for each zone is the Rainbird SST model.

☐ **Check Water Days or Watering Frequency –** Determine how many days your sprinklers are programmed to run. Daily watering is not beneficial for your lawn's roots or your bank account, and Thornton's Water Use Rules limit lawn watering to no more than three days per week.

☐ **Check Zone Run Times –** Are the sprinkler zone times what they should be? Download Thornton's Water Use Rules.

☐ **Check Seasonal Adjust –** To water exactly what is programmed, the seasonal adjust should be set at 100%. If it is set higher or lower, the controller will automatically increase or decrease your run times. To avoid confusion, we recommend keeping the seasonal adjustment at 100.

Note - The Rainbird SST model is different for seasonal adjustment; refer to the manual if you have this controller.

☐ **Manually Run Sprinklers –** After reviewing all the programming, run the sprinklers manually to visually inspect for any issues. Refer to the instruction manual or YouTube for instructions on manually turning sprinkler zones on. Turn on each zone and visually check the water pressure in each zone. Look and listen for any excessive water flowing from sprinkler heads, drip emitters, or other areas of concern.

Not all leaks are apparent. Irrigation leaks can be at the sprinkler head, in the non-mainline piping (lateral pipe), or at the valves. Wet patches on your property, driveway, sidewalk, or spots that are greener than the rest of the landscape may indicate a leak.

☐ **Clean, repair, or replace any:**

- □ Broken or clogged spray heads.
- □ Missing spray heads.
- □ Stuck valves caused by debris or dirt buildup, or a worn diaphragm.
- □ Missing or clogged drip emitters.
- □ Disconnected or torn drip tubing.

☐ **Run one station at a time, checking for the following:**

- □ Uneven pressure, which could indicate a leak in an underground pipe or sprinkler heads. Contact an irrigation professional for assistance.
- □ Sprinkler heads that seep water after an irrigation cycle ends. Replace these with heads equipped with "check valves" to stop the water from leaking out. Often referred to as "low head drainage," sprinkler heads at the lowest elevation may drain the water that is in the pipe.
- □ Misting or fogging (very fine water droplets in the air) indicates too much pressure. If all zones are misting, you may need to have an irrigation professional install a pressure-regulating valve to adjust the water pressure. If only a particular zone is misting, you may be able to adjust the flow control at the valve(s) to reduce the pressure.
- □ Spray hitting a sidewalk or driveway instead of plants. Adjust the direction.

Need help?

Thornton has a free sprinkler consultation program.
Sign up at resourcecentral.org/sprinklers/.

Other Possible Leaks to Check/Consider:

- ☐ Did you have extra people staying at your house for holidays, vacation, or a new roommate?
- ☐ Check all showers and bathtub faucets for leaks.
- ☐ Check sinks, dishwashers and washing machines for drips. Check under sinks and appliances for leaks.
- ☐ Outside hose – make sure the hose is off and there are no leaks at the hose spigots.
- ☐ Inspect the swamp cooler for leaks – is it level, does the float valve work, is there a clogged drain hose?
- ☐ Did you fill a pool? Do you keep the pool covered to minimize evaporation? If you have a pool, test it for leaks and inspect the auto-fill valve.
- ☐ Do you have a pond or water feature? Inspect for problems.
- ☐ Water Softener/Reverse Osmosis System – is it being maintained properly and not discharging water excessively?
- ☐ Humidifier – is it operating correctly?
- ☐ Water heaters – is there water pooling under or around the water heater?

If you observe a recurring damp spot near your water heater:

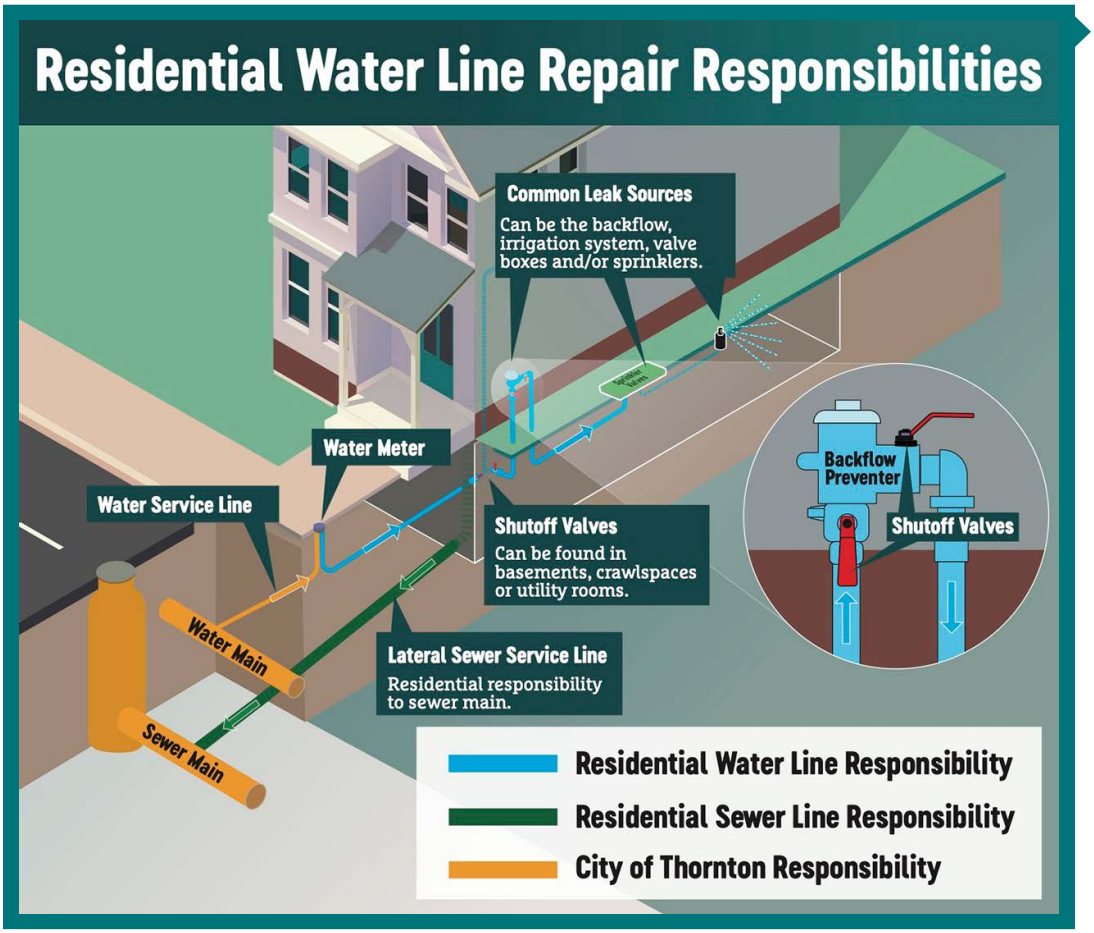
- ☐ First, check nearby plumbing such as overhead pipes, furnace drain lines, and water softener discharge lines.
- ☐ Then inspect the water heater's connections and the temperature and pressure relief valve for visible leaks.
- ☐ If you determine that a leak is coming directly from the tank wall, it's likely caused by corrosion, and it's time to retire the tank. Water heaters last about 15 years with proper care.

Constant Flow? Check your Service Line

The water service line is a pipe that connects from the meter to the home. Locate where the water service line enters your home (typically in the basement or crawl space). Ensure that no water is being used in the house. Look for drips and listen for water flowing at the service line.

☐ **Put your ear right up to the pipe.**

- ☐ Do you hear water flowing? If you do, try turning off the main water valve to your home. Do you still hear water flowing with the main valve shut off? If the answer is yes, the service line may be leaking. If you suspect a service line leak, call a plumber to verify and repair.
- ☐ If the water you hear flowing stops when you shut off the main, there is a leak or usage somewhere in the house or sprinkler system.
- ☐ If you do not hear any water near the main shut-off valve, it could be that you have an intermittent leak or an issue with the sprinkler system.

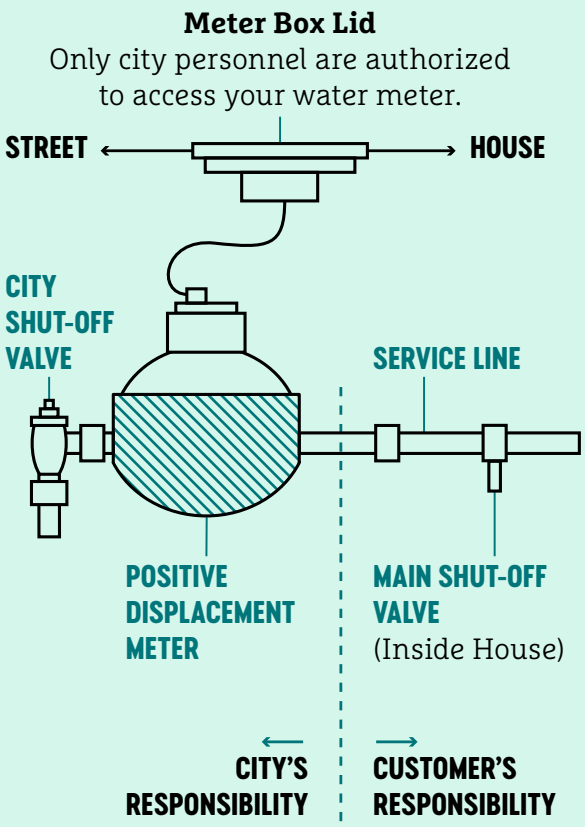


More about Water Service Line Leaks

In Thornton, the homeowner is responsible for the water service line that runs from the meter to the house in the event of a leak. Service line leaks will get worse over time. If you discover a service line leak, we recommend getting at least three quotes from different plumbers. Check with your homeowner's insurance to see if it covers repairs to service line leaks. For other questions about service lines, call Thornton Utilities Operations at 720-977-6500 or email UtilOperation@ThorntonCO.gov.

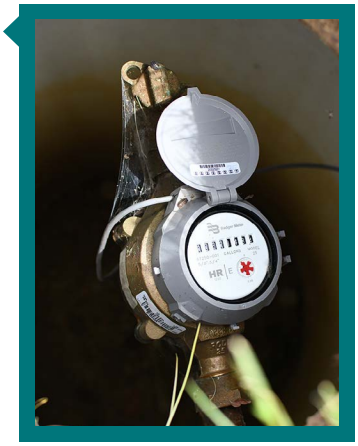
Meter Leak Check

Each single family residential property has one water meter, typically located underground in the front yard, near the sidewalk. The water meter measures the volume of water used in the home and on the property. If you suspect a leak, Utilities Operations staff can check your meter for leaks and verify your water registration at no cost to you. They will inspect the meter and measure the flow rate (if water is flowing through the meter while they are there). If you have received a door hanger from the city of Thornton about a possible leak, your meter has already been checked. If a meter check hasn't been performed, you can request one by calling Utility Billing at 303-538-7370 or emailing UtilBilling@ThorntonCO.gov.



Meter Check Results:

- **Water Flowing –** Utility Meter staff will leave a door hanger to notify you if water is flowing through the meter. If water is flowing constantly, inspect and listen for leaks in the sprinkler system, hose, toilets, and service line.
- **Intermittent Water Flowing –** If water is intermittently registering through the meter, it could be coming from an intermittent toilet leak.
- **No Water Flowing –** If no water is registering when checked, it could still be a toilet that intermittently runs, a sprinkler system issue, or an over watering issue.



Have questions about finding leaks and improving water efficiency? Call Water Resources at 720-977-6600 or email us at Water@ThorntonWater.com.