

Water Consumption/High Bill Complaint

There are many fixtures in the home that contribute to the customer’s water bill.

The items highlighted here have been identified by the Water Research Foundation to be the highest water use percentage for residents. Even though it may not exactly reflect a customer’s water usage, it’s a good place to start.

When attempting to quantify water usage, many in the industry turn to the American Water Works Association (AWWA). The associated Water Research Foundation (WRF) “is the leading not-for-profit research cooperative that advances the science of water to protect public health and the environment. *Governed by utilities*, WRF delivers scientifically sound research solutions and knowledge to serve our subscribers and stakeholders in all areas of drinking water, wastewater, stormwater, and reuse” <http://www.waterrf.org>.

Much of the information provided in these talking points comes from a recent study regarding residential indoor water use. [Here's the full report.](#)

Residential End Uses of Water – AWWA, Research Foundation 2016 Report

							
Toilet 24% 32.6 gphd	Faucet 20% 27.0 gphd	Shower 20% 26.9 gphd	Clothes washer 16% 22.0 gphd	Leak 13% 17.8 gphd	Bath 3% 4.4 gphd	Other* 3% 4.0 gphd	Dishwasher 2% 2.2 gphd
gphd = gallons per household per day							

DeOreo, W. B., P. Mayer, B. Dziegielewski, and J. Kiefer. 2016. *Residential End Uses of Water, Version 2: Executive Report*. Project #4309A. Denver, Colo.: Water Research Foundation.



Toilet flushing can account for **24%** of the water bill, *about 32 gallons per day*

- Check the toilet for leaks by putting a few drops of food coloring in the rectangle tank in the back. Do not use the toilet for 15 minutes. If the color runs into the round bowl, you have a leak. More than likely it's the rubber flapper at the bottom of the tank. This is an easy and inexpensive repair. The average leaky toilet can waste about **200 gallons** of water per day. That's over **6,000 gallons** a month for just one leaking toilet!
- Spring break, summer, holidays and guests can increase the number of flushes per day
- Don't use the toilet as a trashcan. Throw tissues and other bathroom waste in the garbage can. This not only saves water but a possible expensive bill to unclog in your pipes.
- "If its yellow, let it mellow." Only flush when necessary. If you're grossed-out by the "yellow," just put the toilet lid down.
- **Older toilets can use 3.5, 5, or even up to 7 gallons of water with every flush.** Federal plumbing standards now specify that new toilets can only use **1.6 gallons** per flush (GPF), and there are even higher efficiency toilets that use only 1.28 GPF. These high efficiency toilets have come a long way and work very well. Replace the toilet with a high efficiency model and get a credit on your water bill for up to 3 toilets per household. Garland's Water Conservation Credit Program gives \$100 for the first toilet, \$75 for the second and \$50 for the third. The application can be found at garlandwater.com
- If you can't replace your higher volume toilet right now, put a plastic bottle filled with water in your toilet tank to reduce the amount of water used per flush.

Toilet Consumption	Average Flushes Per Day	Estimated Gallons Used Per Month / Per Year Per Person
7 GPF	5*	1,000 / 12,775
5 GPF	5*	750 / 9,125
3.5 GPF	5*	525 / 6,388
1.6 GPF	5*	240 / 2,920
1.28 GPF	5*	192 / 2,336

* American Water Works Association

Manufacturers usually stamp their toilet's water usage per flush on the inside of the tank or on the "neck" of the toilet bowl. Federal plumbing standards passed in 1992 required that toilets use no more than 1.6 GPF (gallons per flush), so if your toilet was installed prior to 1992, then it likely uses 3.5 - 7 GPF.



Faucets can account for **20%** of the water bill - *about 27 gallons per day*

- Don't let the water run while brushing your teeth, shaving, cleaning the kitchen, etc. Turn the faucet on and off and as needed.
- Don't use running water to thaw food. For water efficiency and food safety, defrost food in the refrigerator.
- Install faucet aerators in all of your sinks. These devices add air to the water stream. Faucets without aerators flow as high as 3 gallons per minute, but aerated faucets flow at 1.5 gallons per minute.
- Check for leaking faucets. Even a small drip can add up to a lot of wasted water. A simple repair of the rubber washer might be all that is needed or the faucet may need to be replaced. Faucet leaks are often caused by faulty washers that don't allow your faucet to shut off properly. Replacing faulty washers is an easy and inexpensive way to recoup water and money savings
- Be sure to check the faucets on the outside of the house for leaks.



Showers can account for **20%** of the water bill - *about 27 gallons per day*

- Change out older showerheads for more efficient models. The newer water conserving models do a great job providing good water pressure for a comfortable shower.
- Check for leaks near the showerhead connections.



Clothes Washers can account for **16%** of the water bill - *about 27 gallons per day*

- Only run full loads.
- Choose the correct water level for each wash.
- If available, choose a "light" wash whenever possible.
- If you are thinking about replacing your clothes washer, consider checking out the list of approved washers at garlandwater.com. If you purchase a washer that is on this list, you can receive a credit of \$75 - \$125 depending on which machine you purchase.

Spring/Summer Irrigation can easily double your monthly water use

In ground irrigation system estimates for water use:



Spray head (ESTIMATE): up to 3 gallons per minute per spray head



Rotor head (ESTIMATE): up to 9 gallons per minute per rotor head

Do the Math:

Number of sprinkler **heads** on property

times number of **gallons** per minute (spray or rotor)

times number of **minutes** per use = Gallons used

Heads _____ X Gallons _____ X Minutes _____ = Gallons used

A note about Winter Quarter Averaging

*The waste water charge on your monthly utility bill is calculated each year using your averaged water consumption for the months of December, January, February and March. This is called **Winter Quarter Averaging**. Cutting back on irrigation in the winter can save you money all year. Once the cold weather sets in, experts suggest turning the system off all together. If you need a little water during the winter or before a freeze, run your irrigation system manually.*

SOIL (The foundation of a healthy landscape):



Here in Garland, we live in a region called the “Blackland Prairie”.. Growing plants and turf is often difficult in clay soil because it's thick and goeey when it's wet and hard as concrete when it's dry. Because clay particles are so tiny, they pack together easily and become very dense, virtually impermeable to water and air, which are essential for healthy soil and plants. Adding organic matter to the soil breaks up the clay particles so water can get through and roots can get some air flow

IRRIGATION (Life giving moisture): There’s good news and not-so-good news (but mostly



good) when it comes to irrigating clay soil. The good news is that once we get water deep into the soil, it has a tendency to hold it for a while which is good because it means we can water less. On the other hand, getting the water deep into the tightly packed particles of clay takes a certain technique. No worries, it’s not difficult at all, just a little different than most of us are used to. Clay soil has a very slow water absorption rate. In other words, it must be watered slowly. More often than not, running an irrigation zone for 15 – 20 minutes at a time is too much water for the soil to absorb and it just

ends up running off of the yard and down the street. The best way to ensure that the roots of your turf and plants are getting watered properly is to use the Cycle Soak Method of Irrigation. Instead of running each zone one time around for too many minutes at a time, try breaking the run time into 3 shorter cycles. For example, instead of running the zone for 15 or 20 minutes straight, break the watering cycle into 2 cycles of 7 to 10 minutes or 3 cycles of 5 to 7 minutes with about 30 – 60 minutes in between cycles. This gives the clay soil time to deeply absorb the water that you have applied and will be ready to absorb more during the next short cycle. [More details on Cycle Soak Method here...](#)

Irrigation Systems Basics

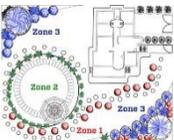


The Controller: The irrigation controller is usually found inside the garage. It is the system's computer or "brain" and tells your irrigation system when to come on and for how long to run. Many times the controller is set to run during periods of time when we are away from home or are asleep. Automatic irrigation controllers are a great convenience for getting the job done, but beware, without a personal check on your system, you may have leaks or equipment malfunctions that are causing damage and/or wasting water without your knowledge. Think of the controller as an "automatic withdrawal" of water which greatly affects the size of the water bill you get each month.

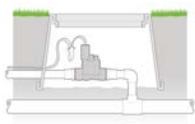


Weather-based irrigation controllers (or Smart irrigation controllers)

Smart irrigation controllers reduce outdoor water use by monitoring environmental conditions such as rain, wind, temperature, soil moisture, slope and plant type. The program in the controller uses this information to adjust the amount of water each time the system operates. With a Smart irrigation controller, the right amount of water can be applied to maintain healthy plants.



Irrigation Zones: Your sprinkler system is sectioned off into zones. Most residents have between 5 and 12 zones. Hopefully each zone waters a different type of plant material. In other words, zones that water turf are separate from zones that water planting beds because they definitely have different watering requirements. Based on water pressure, only so many sprinkler heads can be on a single zone. If you have a large property, you'll generally have more zones. Take a little time to get to know the zones on your system. Manually turn on zone 1 and see how many sprinkler heads are in the zone and what area they water. Do this for all of the zones on your system. Be sure to right down the information for each zone so you will be familiar with your system and how it applies water to your landscape.



The Valves: Each zone on your sprinkler system is controlled by a valve. When the controller sends a signal to the valve, it opens a gate and allows water to run through the pipes and activates the sprinklers of that particular zone. When the programmed time is done, the controller shuts the valve to the zone and opens the valve on the next zone to continue the watering cycle.



The Sprinkler Heads: Sprinkler heads are the most visible part of an irrigation system. It is the small round device where the water comes out and sprays your landscape. They are installed underground and connected to the pipes and the water source. The “sprinkler head” is the outside casing that is attached to the pipe. The “nozzle” is the interchangeable insert at the top. Nozzles come in a variety of sizes, shapes, patterns and spray ranges so you can water any size or shape area in your landscape. Sprinkler heads generally spray between 7 and 17 feet. Installed nozzles can be either fixed pattern or adjustable to help apply water to an area that has unusual size or shape.



Rain and Freeze Sensors:

Rain and freeze sensors are a great addition to an automatic irrigation system. When temperatures are near freezing or when we have had substantial rain, the sensor overrides the controller and temporarily turns it off. When temperatures rise again or when the rain has stopped and things dry out a bit, the sensor releases the controller back to its regular programming mode.



Garland’s Energy/Water Audit Program is available to customers on a first-come, first-served basis. The city auditor will help identify energy and water conservation opportunities.



PLANT MATERIALS (Choose Native or Adapted plants)

Texas can be a harsh environment for growing plants. The good news is that if we focus on using Texas Native and Adapted Plants, beautiful, green and colorful landscapes are easily within our grasp. Check out www.txsmartscape.com for an extensive list of wonderful plant selections for our growing zone (which is Zone 7 & 8).