

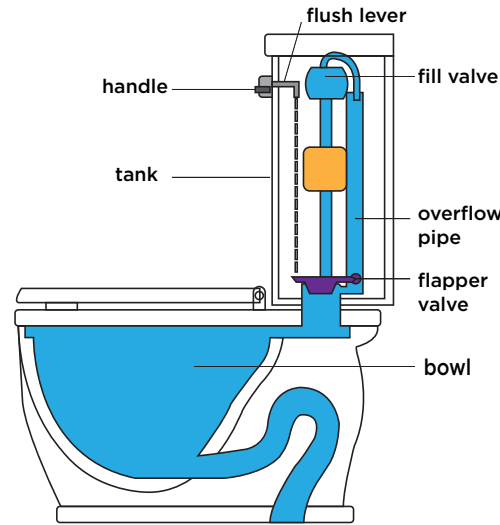
According to the U.S. Environmental Protection Agency, the average American home wastes more than 10,000 gallons of water per year due to running toilets, dripping faucets, and other household leaks. The good news is that many leaks are easy to fix—but first you have to find them.

## Check for Toilet Leaks

The most common leaks at home are toilet leaks. Check your toilet for leaks by placing a leak detection dye tablet or a few drops of food coloring into the toilet tank. Wait 15 minutes. If you see color in the toilet bowl, you have a leak.

Two common toilet leak sites are the overflow pipe and the flapper valve, both located inside the toilet tank.

- 1. Overflow pipe:** If the leak is at the overflow pipe, you will see water flowing over the top of the pipe, which means the water level is too high. (Sprinkling talcum powder on the surface of the water makes it easier to spot this leak.) You can adjust the water level in different ways, depending on the type of toilet. Older toilets have a float arm that can be bent down (be careful, or it may break!) to adjust the water level so it stops a half-inch below the top of the overflow pipe when refilling. For many newer toilets, the water level can be adjusted by turning a small knob.
- 2. Flapper valve:** If the leak is not at the overflow pipe, the flapper valve is probably the culprit. If the flapper valve appears to be deteriorated or does not seal completely, it should be replaced.



You can find a replacement flapper at a local hardware store. Make sure you know your toilet's manufacturer (often written behind the seat hinge, between the seat and the tank) and model number (often a four digit number stamped into the porcelain on the back inside of the toilet tank) before going to buy a replacement. So-called "universal flappers" may fit your toilet, but can cause 1.6-gallon toilets to use as much as 5 gallons per flush.

If your toilet still leaks after checking the overflow pipe and the flapper valve, you may need the assistance of a plumber.

### Fixing the Leak

Some repairs, like replacing a toilet flapper, sprinkler, or drip emitter, may be fairly easy to handle yourself. Your local hardware or irrigation supply store may be able to help. However, for anything more significant, you may want to call a plumber, landscaper, or even a leak detection company to help you locate and fix the problem.

### Leak Adjustments

If you discover a leak and repair it promptly, you may be able to request a leak adjustment on your water bill. Adjustments are limited to two billing periods and one adjustment every 36 months. For more information visit [marinwater.org/leak-adjustments](http://marinwater.org/leak-adjustments) or contact our Customer Service Department at 415-945-1400.

### Need Help?

Through our Conservation Assistance Program (CAP), we'll send a water conservation specialist to your home or business for a free consultation. Let one of our experts help you check for leaks and find ways to save water and money. Call 415-945-1523 to schedule an appointment.

# HOW TO BE A LEAK DETECTIVE



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# Use Your Water Meter to Check for Leaks

Your water meter can tell you if you have a leak in your plumbing, and it can even help you figure out where the leak is.

To check for a leak, first make sure no water is running inside or outside your house. Be certain the toilet tank is not refilling and the automatic ice cube maker is not operating when performing this task. Find your meter (usually located near your front curb) and look for the low-flow indicator. When the water is turned off, the low-flow indicator should not move. Watch the meter for at least five minutes. A circular motion by the indicator suggests a leak. If the low-flow indicator is moving in a sporadic manner (starts-then-stops, starts-then-stops), a toilet leak is the most likely problem (water drains and then refills inside the tank).

If your meter does not have a low-flow indicator, you can use the sweep hand to detect leaks. Mark the position of the meter sweep hand with a pencil. Wait approximately 30 minutes without running any water before rechecking the sweep hand. If it has moved, a leak is indicated.

If you determine that you have a leak, you can figure out where the leak is by using a process of elimination.

1. Start by turning off the water supply valve to the toilets and rechecking the meter for movement.
2. If a leak still exists, turn off the main water valve to the house (usually located directly in line from the water meter). If the meter indicates the leak has stopped, then you know the leak is somewhere after the main shut-off valve.
3. If the leak continues after closing the main shut-off, the leak is somewhere between the meter and the house. If you have an irrigation system, it may branch off the main line between the meter and the house and may be the source of the water leak.



## Check for Irrigation Leaks

If your water meter indicates a leak and you suspect your irrigation system is the culprit, first locate your irrigation system's shut-off valve or backflow prevention device. Usually the shut-off valve is located near the beginning of the irrigation system and the backflow prevention device near the meter. Turn off the shut-off valve/backflow device and return to the meter to see if the movement has stopped. If the movement does not stop, then the leak is not in the irrigation system. This means the leak may be between the meter and the irrigation system.

If the movement does stop, then you have a leak in your irrigation system. Go to each of your automatic control valves to see if the area is wet. Often, these automatic valves will be leaking through a worn diaphragm or faulty connection. Sometimes debris can become lodged inside the automatic valve, causing it to remain open slightly, continually delivering water to the sprinklers in a small but steady dose.

You can purchase a diaphragm replacement kit at your local irrigation supply store to replace the worn diaphragms or you can have a landscape professional assist you. If the problem is not at the automatic valve, check all equipment between the meter and the irrigation valves. Many times threaded and/or glued joints will fail and produce small or large leaks.

Your system also may have a leak in it that only reveals itself when the system is on. Manually turn on each valve one at a time and inspect all sprinklers and drip emitters for breaks or leaks. If you notice that towards the end of the line less water is being applied than at the beginning, there may be a leak in the irrigation supply line or elsewhere underground. Look for areas of excessive weed growth, moss, or dampness to find an underground leak.

Your irrigation controller also may be a source of increased water use. After even a brief power interruption, many automatic controllers will default to a factory-set program of ten minutes per day for each station. Check the start and run-times and irrigation days programmed in your controller.



Shut-off valve



Shut-off valve



Backflow device

## Check for Swimming Pool Leaks

Swimming pool leaks can be difficult to detect, especially in summer when water is lost to evaporation. To check for a leak, take a 5-gallon bucket and fill it half way with water from the pool. Set the bucket on the pool steps and add or remove enough water so the water level in the bucket is the same as the water level in the pool. Wait a day or two and check the water level again. Because the water in the bucket and in the pool will evaporate at the same rate, the water levels should be the same. A higher water level in the bucket means water is leaving your pool faster than can be accounted for just by evaporation, and you have a leak.