

Marin Municipal Water District

Do-It-Yourself Home Water Survey

The **Do-It-Yourself Home Water Survey** will guide you through activities to find out how to save water at your home. Follow the steps to check for indoor and outdoor leaks, measure flow rates of your indoor plumbing fixtures, evaluate the efficiency of your irrigation system, and more.

To track your findings, fill out the **Survey Form** as you work through the activities. Mail the completed form to MMWD to receive **free** water conservation items such as water-efficient showerheads and faucet aerators to replace high-flow ones. If your home is already efficient we still want to hear from you. Mail in the survey form to receive a small thank-you gift.

If you have questions about the survey, please call us at (415) 945-1520.

Thank you for your interest in water efficiency and for helping to conserve this precious resource!

think blue. go green.



MARIN MUNICIPAL
WATER DISTRICT

marinwater.org

Home Water Survey Form



Date _____ MMWD Service Number _____
Name _____
Address _____
Mailing address if different _____
City _____ CA, Zip _____
Daytime phone _____ Email address _____

Water Meter

What is the current meter reading? _____
Did you find movement on the meter? Yes _____ No _____
If yes: Leak location _____ Date of repair _____

Toilets

How many HET? (1.28 gpf or dual flush) _____ How many 1.6 gpf? _____
How many 3.5 gpf or greater? _____
Did you find any toilet leaks? Yes _____ No _____
If yes, how many toilets with flapper leaks? _____ Date of repair _____
How many toilets need water level adjustment? _____ Date adjusted _____
How many toilets need fill valve repair? _____ Date of repair _____
Other type of repair(s) needed _____ Date of repair _____

Showers

How many showers with 2.0 gpm or lower flow? _____
How many showers have a flow rate greater than 2.0 gpm? _____
If shower flow rate is greater than 2.0 gpm would you like to receive free 2.0 gpm showerhead(s) from MMWD for replacement? (Limit of two per household, as needed) Yes _____ No _____

Sinks

Does your kitchen faucet use more than 1.5 gpm? Yes _____ No _____
How many bathroom faucets use more than 1.5 gpm? _____
If faucet flow rate is greater than 1.5 gpm would you like to receive free 1.5 gpm aerator(s) from MMWD for replacement? (Standard aerators fit most, not all, faucets) Yes _____ No _____

Outdoors

Did you evaluate your irrigation system and outdoor water uses? Yes _____ No _____
Were leaks found? Yes _____ No _____ Location _____
Date of repair _____

Did you find the DIY survey worthwhile? (Circle one)
Yes, highly worthwhile Yes, somewhat worthwhile Not worthwhile

Comments or suggestions _____

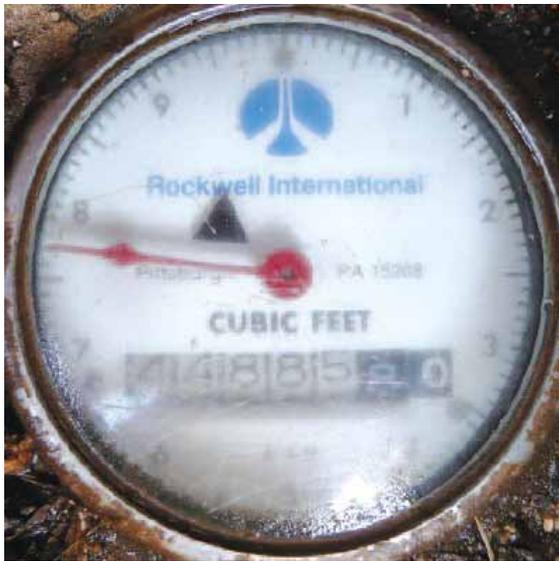
Return the completed form to MMWD to get free high-efficiency showerheads and faucet aerators to replace inefficient ones. If your fixtures are already efficient, we will send you a small thank-you gift instead.

MMWD Conservation, 220 Nellen Avenue, Corte Madera, CA 94925

Step 1: Check the Meter for Leaks

Your water meter is an important conservation tool. It not only measures the amount of water you use, but it can tell you if there is a leak in your plumbing.

-  To check if you have any leaks, you will need to check your water meter's low-flow indicator while all water-using devices are turned off. (Don't forget the clothes washer, dishwasher, and things that cycle on and off like ice-makers and water softeners.)
-  See "How to Read Your Meter" starting on the next page as a guide to check your meter for movement.
-  If the low-flow indicator (usually a triangle shape) is moving when all your water using fixtures are turned off, there is a leak. **Go to Step 2: Isolate the Leak.**
-  If the low-flow indicator is not moving, there is no continuous leak. **Go to Step 3: Check for Toilet Leaks.**



How much water do you use?

To find out how much water you use per day, read the water meter and record the readings at the same time on two consecutive days. See "How to Read Your Meter" for instructions to convert the meter's cubic feet to gallons.

How to Read Your Meter

Locate Your Meter

The meter is usually located by your front curb in a direct line with the outside main faucet or valve (where you turn your water off to your house or business). It is usually housed in a concrete or plastic meter box marked MMWD or Water. If you have trouble locating your meter, call Customer Service at (415) 945-1400.

This is a good opportunity to make sure your meter box is accessible by clearing out vegetation or debris that is blocking the meter.

To check the meter, put on gloves, insert a tool such as a screwdriver in the hole, and pry open the concrete or plastic lid. (Do not use your fingers.) A concrete lid is heavy, so be careful when handling it. Set the lid aside and check carefully inside the meter box to avoid contact with insects or rodents. To read the meter, lift the cover. (Always replace the cover on your water meter after you are finished.)

Read Your Meter

Reading your water meter is similar to reading the odometer in your car. Read all the numbers from left to right that appear under the words Cubic Feet. The first digit on the right represents one cubic foot, the second from the right represents 10 cubic feet, the third from the right represents 100 cubic feet, or one ccf, and so on (see illustration).



One revolution of the water meter sweep hand equals 1 cubic foot or 7.48 gallons.

Calculate Your Use

To calculate your water use, subtract the previous meter reading from the current meter reading.

Example:

$$\begin{array}{r} 696.71 \\ - 695.50 \\ \hline 1.21 \text{ ccf} \end{array}$$

Your Meter: _____

$$\begin{array}{r} \text{_____} \\ - \text{_____} \\ \hline \text{_____ ccf} \end{array}$$

(1 ccf = 100 cubic feet or 748 gallons)

For billing purposes, MMWD measures water consumption in CCFs or hundred cubic feet every two months. But you can easily calculate your usage in gallons for tracking your consumption on a daily or weekly basis.

Example:

$$\begin{array}{r} 1.21 \text{ ccf} \\ \times 100.00 \text{ cubic feet} \\ \hline 121.00 \text{ cubic feet} \\ \times 7.48 \text{ gallons} \\ \hline 905.08 \text{ gallons} \end{array}$$

Your Meter: _____ ccf

$$\begin{array}{r} \text{_____} \\ \times 100.00 \text{ cubic feet} \\ \hline \text{_____} \\ \times 7.48 \text{ gallons} \\ \hline \text{_____} \end{array}$$

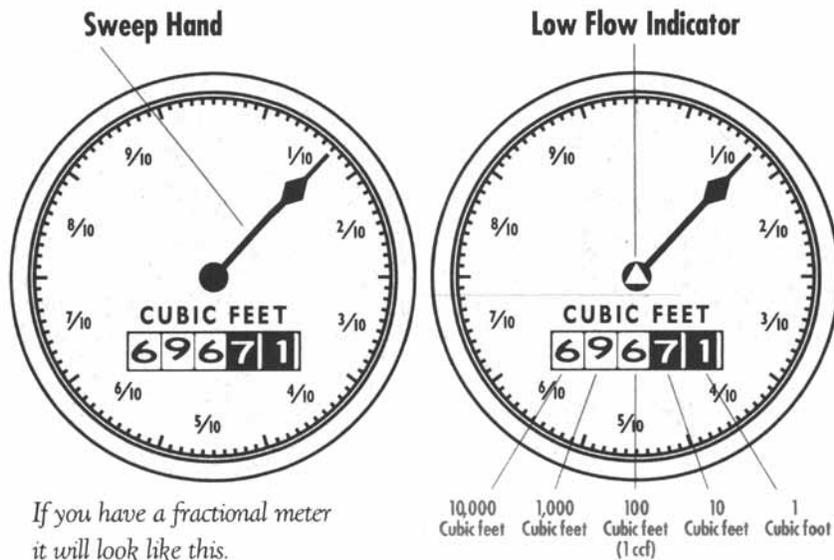
(1 cubic foot = 7.48 gallons)

How to Read Your Meter (continued)

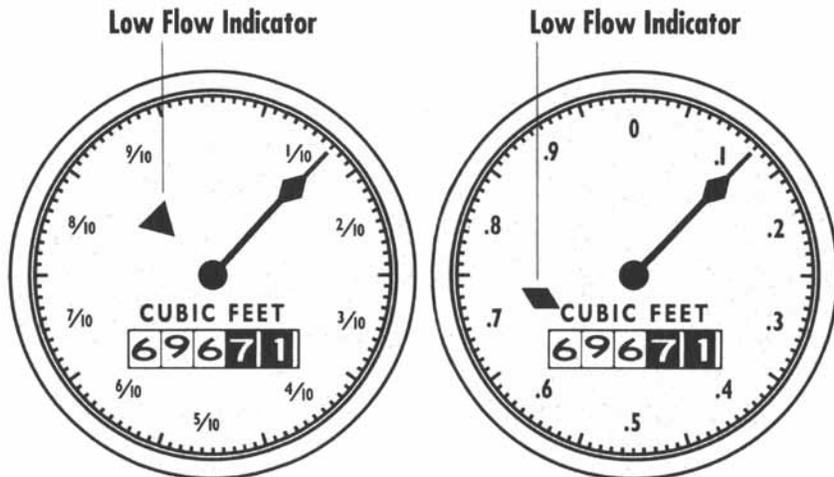
Check for Household Leaks

To check for a leak you must first turn off all faucets inside and outside your house. Be certain the toilet is not flushed and the automatic ice cube maker is not operating when performing this task. When the water is turned off, the low-flow indicator (see illustration) should not move. A circular motion by the indicator suggests a leak.

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 lightly with a pencil. Wait approximately 30 minutes before rechecking the sweep hand. If it has moved, a leak is indicated.



If you have a fractional meter it will look like this.



If you have a decimal meter it will look like this.



Step 2: Isolate the Leak

-  First, turn off the main water shutoff valves for the house and for the irrigation system. The main shutoff valve is usually located outside the front of the house in line with the water meter. The main irrigation shutoff can either be in the same location, on the “T” off the supply line as shown in the picture, or may be located elsewhere on your irrigation system. Note: Plumbing fixtures can be damaged. You may want to contact a licensed plumber for assistance when turning valves on or off.



-  Next, check the low-flow indicator on the water meter again. If the low-flow indicator is still moving, there is a leak in the supply line from the meter to the house. Try to find the leak by identifying a puddle or wet area, and call a plumber to fix the leak. If you are unable to find the leak, you may need to hire a leak detection service.
-  If the low-flow indicator stopped moving, the leak is either in the house or in the irrigation system.
-  To check if the leak is in the house: Turn **ON** the main shutoff valve to the house and leave the irrigation main valve **OFF**. Check the low-flow indicator on the meter. If it has started moving again, the leak is in the house. **Go to Step 3: Check for Toilet Leaks.**
-  To check if the leak is in the irrigation: Turn **OFF** the main house shutoff valve and turn **ON** the main irrigation valve. Check the low-flow indicator on the meter. If it has started moving again, the leak is in the irrigation system. Find and repair the leak or call a landscape professional.
-  If you find a leak, make sure the leak is fixed promptly. Leaks waste water and cost money. Once the leak has been repaired, you may be eligible for a leak rate adjustment on your water bill. Please contact MMWD Customer Service at (415) 945-1400.

Step 3: Check for Toilet Leaks

Toilets are the most common place for an indoor leak.

-  To check your toilet for leaks, lift the tank lid and place a dye tablet or a few drops of nontoxic food coloring in the tank. Wait about 15-20 minutes, then check the toilet bowl. If there is dye in the toilet bowl, there is a leak. It could be either the water level that needs adjustment or the flapper that needs to be replaced.
-  The water level in the tank should be at the manufacturer's line labeled "water level" but never closer than one inch below the open top end of the overflow tube. If the water level is correct and dye is in the bowl, then most likely the flapper (flush valve) is the cause of the leak. The fill valve is the other likely leak location.
-  To find the right replacement flapper for your toilet and for instructions on how to replace your flapper, visit www.toiletflapper.org.
-  For more tips on repairing toilet leaks, visit www.h2ouse.org.
-  If you find and fix a toilet leak, confirm the fix by performing another dye test and then repeat **Step 1: Check the Meter for Leaks**, to make sure there are no other leaks. If the low-flow indicator continues to move with the house valve open and all fixtures and appliances turned off, go to **Step 4: Check for Other Leaks**. If the low-flow indicator on the meter stops moving once the toilet leak is fixed, go to **Step 5: Indoor Water Use**.



 Did you know that a leaky toilet can waste up to 200 gallons of water a day?

Step 4: Check for Other Leaks

What else could be leaking?

-  Look for dripping faucets inside and outside.
-  Check for standing water or signs of moisture damage under sinks and around the water heater, dishwasher, clothes washer, and the ice-maker hose behind the refrigerator.
-  Look for standing water on the surface of the ground or areas that are brighter green than the rest of the landscape due to excess water. See **Step 6: Outdoor Water Use** for irrigation system evaluation.
-  Check for breaks in the irrigation system by turning on the sprinklers or drip lines one station at a time and observing the system in operation.
-  Check the irrigation valve boxes for standing water from a leaking valve.
-  If you cannot find the leak, call a plumber, landscape professional, or leak detection service.



Estimated faucet leakage rates

Drips...

60 drops per minute = 192 gallons per month

90 drops per minute = 310 gallons per month

120 drops per minute = 429 gallons per month



Step 5: Indoor Water Use

Once you have determined that water is not being lost to leaks, you can evaluate how much water is used in your household and determine where and how water use can be reduced.

If your showerheads have a flow rate of more than 2.0 gallons per minute (gpm), or if your kitchen and bathroom faucets have a flow rate of more than 1.5 gpm, then they are considered high-water-use fixtures. Follow these instructions to check the flow rates of all showerheads and faucets.

Measure showerhead flow rates:

1. Turn on the shower to its maximum flow.
2. Catch the full flow for 15 seconds in a bucket or wide-mouthed pitcher that has volume markings on it.
3. If using a bucket, pour the captured water into a measuring cup or quart jar.
4. If the total volume collected in 15 seconds is more than two quarts (64 oz.), then the shower flow rate is more than 2.0 gallons per minute.



Measure all bathroom and kitchen faucet flow rates:

1. Turn on the faucet to its maximum flow.
2. Catch the full flow for five seconds in a bucket or wide-mouthed pitcher that has volume markings on it.
3. If using a bucket, pour the captured water into a measuring cup or quart jar.
4. If the total volume collected in five seconds is more than two cups (16 oz.), then the faucet flow rate is more than 1.5 gallons per minute.



Step 5: Indoor Water Use *(continued)*

Measure toilet flush rates

To find the flush rate of your toilet, see the next page for instructions on “How to Check Your Toilet’s Flush Volume.” If you determine your toilet’s flush rate is 3.5 gallons per flush (gpf) or higher, consider replacing it with a high-efficiency toilet that uses 1.28 gpf or less.



Clothes washer

If your clothes washer is not a high-efficiency washer, please consider purchasing one. A standard clothes washer uses about 40 to 45 gallons per wash load. A high-efficiency washer uses about 15 to 25 gallons per wash load.



Dishwasher

A standard dishwasher uses 8 to 12 gallons per wash cycle. A high-efficiency dishwasher uses 5 to 7 gallons per wash cycle.



How to Check Your Toilet's Flush Volume

Flush volume refers to how much water is released when a toilet is flushed. Since January 1994 all toilets sold in the U.S. must use 1.6 gallons per flush (gpf) or less. More recently, high-efficiency toilets (HETs) with a flush volume of 1.28 gpf or less have been available. Older toilets use up to seven gallons per flush! There are several ways to find the flush volume of a tank-style toilet:

 The manufacturer's name and a "gpf" label often appear right behind the seat hinge on the bowl. If you don't see a gpf label, lift the tank lid and check the inside back of the toilet tank for the manufacturer's date stamp—it is usually stamped directly into the porcelain. The chart at right will help you determine your toilet's flush volume.

Special Note for HETs: HETs have been available on a limited basis in the U.S. since 1999, but have only been commonly available since about 2005. Some manufacturers of dual-flush HETs use the same 1.6 gpf bowl for their HETs as for their standard toilets. Thus the bowl stamp may show 1.6 gpf even though the toilet is an HET.

Year Toilet Was Manufactured

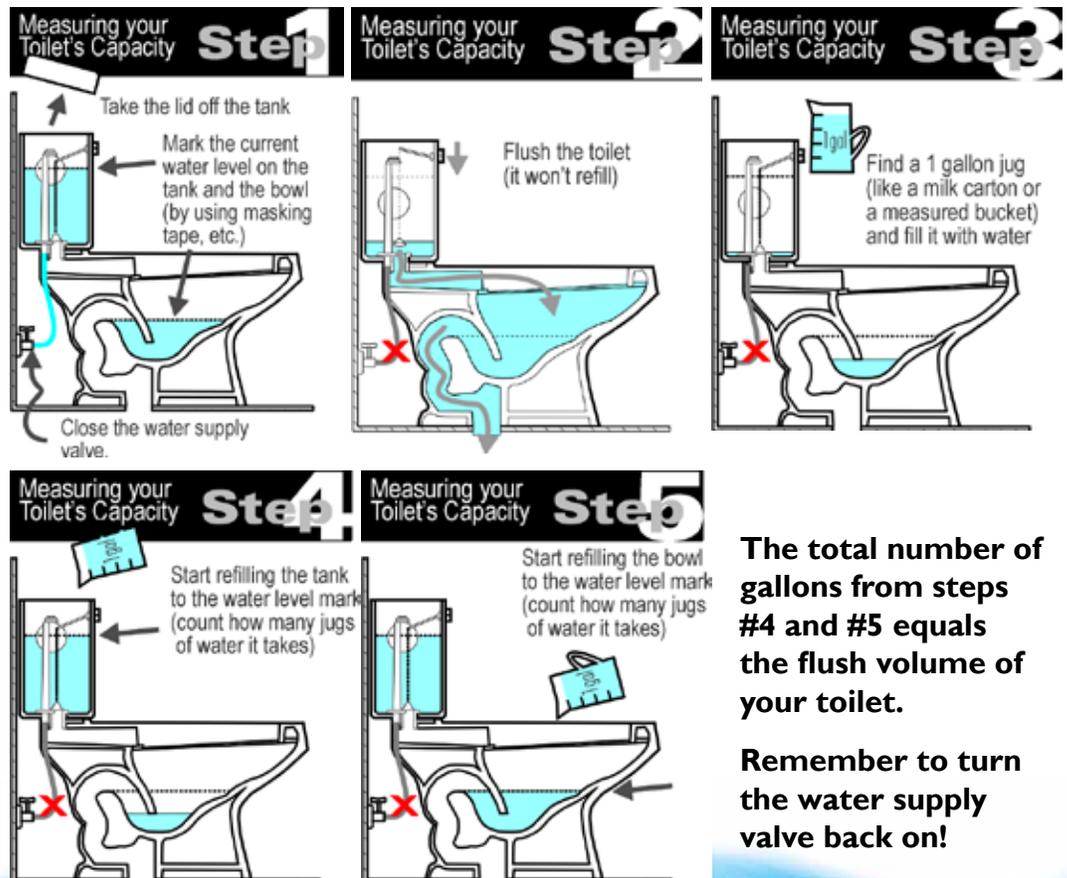
Gallons Per Flush

| | |
|---------------|---------------------|
| pre-1982 | 5-7 |
| 1982-1990 | 3.5 |
| 1990-1994 | 1.6-3.5 |
| 1994-present | 1.6 |
| ~2005-present | 1.28 HET (see note) |

 If you can't find a date on your toilet, or if the date is between 1990 and 1994 (when both 3.5 gpf and 1.6 gpf toilets were sold), you can measure the water used during a flush. **Note:** To use the following method you first need to shut off the water supply valve at the wall behind the toilet. If the valve is stiff

and can't be turned off, try holding the float mechanism in the tank in the "up" position with a string or rubber band to keep the toilet from refilling while you are performing the following steps.

Special Note: If your toilet tank has a large black cylinder inside, rather than the standard flush mechanism, your toilet's maximum flush volume is 1.6 gpf or less. The flush volume is usually printed on the cylinder.



Step 6: Outdoor Water Use

-  Complete the “Irrigation Checklist” on the following page to ensure that your system is functioning optimally.
-  Water your landscape only when needed. By knowing how much water your plants need, you can apply the right amount of water and no more, have healthier plants, and save money.
-  A “Weekly Watering Schedule” based on current weather conditions is posted on marinwater.org every Friday during irrigation season. To sign up to receive the schedule via email—along with helpful water-smart garden tips—send a request to conservation@marinwater.org or write your email address on the survey form you return to MMWD.
-  There are many water conservation opportunities for the swimming pool owner. Simply by using a pool cover, you can cut down on the amount of water lost to evaporation by 90 to 95 percent. Plus, you will save on energy costs for heating the water and running pool equipment. Keeping your swimming pool and pool equipment well maintained also will help prevent water waste problems. For more information on swimming pool evaporation, finding pool leaks, maintenance, and more, visit www.h2ouse.org.



Irrigation Checklist

- Do your sprinklers overspray onto the sidewalks, patio, driveway, or street? Adjust spray pattern, relocate sprinkler heads, or change spray nozzles.
- Are your sprinkler heads misting? This indicates a high water pressure problem. Adjust or install a new pressure regulator. Set pressure per the recommendation of the sprinkler manufacturer, usually between 40 and 50 pounds per square inch (psi).
- Are spray patterns blocked? Trim back vegetation or raise the sprinkler heads as needed; this will increase the uniformity of application.
- Do you have broken sprinkler heads? Replace as soon as possible or install a temporary cap. Replace sprinkler and nozzle with one that matches those on the existing circuit.
- Do you have mismatched sprinkler nozzles or heads? Precipitation rates and performance vary greatly between manufacturers. Replacements must match sprinkler heads on the same circuit. Mixing types or brands wastes water.
- Are separate irrigation circuits provided for drip, spray, rotor heads, and micro-misters? Provide separate circuits for different irrigation types; this will save water and make for healthier plants.
- Does the sprinkler spray pattern (for lawns) reach the adjacent head? Adjust spray pattern, replace nozzle, or relocate sprinkler head.
- Do you find moss or mushrooms growing around your plants? Your plants are being overwatered. Reduce your watering time a few minutes each week until your plants start to show signs of stress. Then increase your watering time slightly until the stress is eliminated.
- Are your high- and low-water-use plants mixed together on the same irrigation circuits? Group plants with similar water needs on the same circuit.
- Do you have mulch around your shrubs, trees, and flowers? Providing a 2-inch layer of mulch will substantially reduce water use and weeds. Mulch also increases water infiltration into the soil.
- Do you have excessive thatch buildup in your lawn? This condition inhibits water infiltration into the soil and is usually caused by overwatering or over-fertilization.
- Is your soil saturated after only watering for a few minutes? Does water run off your slopes? You probably have a clay soil, and water is absorbed very slowly. Shorten your watering times and use multiple start times to allow the water to soak in to avoid runoff.
- Are the stations at your irrigation controller labeled? Label each station appropriately. For example: drip for groundcover, spray for lawn, micromisters for flowers. A site map is a helpful tool in determining watering schedules for each station.
- Do you have basins around your newly planted trees and shrubs? Basins help direct water to the root ball, if drip irrigation is not used.

