

CONDUCTING A HOUSEHOLD WATER AUDIT

WHAT IS A HOUSEHOLD WATER AUDIT?

A household water audit is an assessment of how much water is used and how much water can be saved in the home. Conducting a water audit involves calculating water use and identifying simple ways for saving water in the home.

WHAT ARE THE BENEFITS OF CONDUCTING A WATER AUDIT?

Conducting a water audit can help you save money by reducing your home water bill (and sewer bill if you are connected to a public sewer system). Conducting a water audit will make you aware of how you use your water and help to identify ways you can minimize water use by implementing certain conservation measures. It is possible to cut your water usage by as much as 30 percent by implementing simple conservation measures and without drastically modifying your lifestyle.

HOW DO I CALCULATE WATER USAGE IN MY HOME?

It is important to realize that water use throughout the year often varies with the season. Most people use more water in the warmer months for gardening, washing cars, and other outdoor uses. If you conduct your water audit in the winter or fall, you should still consider the additional water you use in the summer months. The American Water Works Association (AWWA) estimates that the average indoor water use per person is 94 gallons of water per day; this does not take into account outdoor water use (watering lawns, washing cars).

Calculating Water Use From Your Water Bill



If you obtain water from a community water system, you probably receive a water bill that tells you how much water you use. Many water utilities provide customers with bills that contain information regarding the amount of water consumed and average daily consumption during the billing period. If the average daily consumption is not provided, you can calculate it by dividing the total amount of water used by the number of days in the billing period. Determine whether your water is measured in cubic meters (m^3), cubic feet (ft^3), gallons (gal), or liters (L) and convert to gallons.

For converting into gallons, use the following conversion factors:

$$m^3 \times 264 = \text{gal}$$

$$ft^3 \times 7.48 = \text{gal}$$

$$L \times 0.264 = \text{gal}$$

There are several conversion tools available on the Internet that can be used to make your calculations easier. (<http://www.onlineconversion.com/volume.htm> or <http://www.mathconnect.com/volumel.htm>)

Calculating Water Use With A Meter

If your water bill does not provide water consumption data, then you can read your water meter to obtain this information. Water meters measure the total amount of water used in your home and are usually located at the property line or on the house. The meter may measure in cubic meters, cubic feet, gallons, or liters. To obtain your water use over the course of a 24-hour day, read your meter at the same time on two consecutive days. You may want to measure water use for several days and then calculate a daily average.

Estimating Water Use Without A Meter

If you do not have a water meter you can estimate your water use. It will be important to measure all water use, indoor and outdoor, to accurately estimate the quantity of water used. To determine how much you consume water in your home it is necessary to measure water flow from each fixture in your house:

- To calculate flow for faucets (indoor and outdoor) and showerheads, turn faucet to the normal flow rate that you use, and hold a container under the tap for 10 seconds and measure the quantity of water in the container. Multiply the measured quantity of water by 6 to calculate the gallons per minutes (gpm).
- To calculate flow for toilets, turn off the water supply to the toilet, mark the water line on the inside of the tank, flush, and then fill tank with water from tap. Measure the volume of water that is required to fill water back up to the water line mark on the tank and record this number. Turn water on to the toilet to resume normal use.
- If your appliances or fixtures are relatively new, you may be able to obtain the flow rate from the manufacturer's specifications. Otherwise, use the following averages:
 - Washing machine – 41 gal per use
 - Dishwashing machine – 9 gal per use

Next, measure how many times per day or how many minutes each day you use each fixture or appliance. Multiply the water flow per fixture by the minutes per day the fixture is used. Multiply the flow average for each appliance by the number of times the appliance is used each week. Don't forget to include the amount of time you use outdoor faucets each day. The [water audit spreadsheet](#) is a useful tool to evaluate water use in the home.

HOW DOES MY WATER USAGE RANK?

The average citizen uses about 100 gallons of water per day. This includes indoor as well as outdoor water usage. To calculate the per person daily water usage rate, divide your daily water usage by the number of people in your home, and then look at the following chart to rate your water usage.

Gallons Per Person Per Day	Rank	Comments
<80 gal/day	Excellent	Wow! You use water wisely. Please share your conservation techniques with friends and neighbors.
80 – 100 gal/day	Good	Good Job! You use less water than the average citizen.
101 – 120 gal/day	Fair	You use more water than the average citizen.
>120 gal/day	Poor	You use a lot of water.