

## Want More Information About Water Conservation?

Refer to the following publications, municipalities, government departments, and organizations for more information about ultra-low-flow toilets and other ways you can conserve water:

- *Don't Waste A Drop: Finding, Fixing and Preventing Indoor Water Leaks*—This informative brochure, published by the New Mexico Office of the State Engineer, contains detailed information about how to diagnose and repair many common toilet leaks. View the brochure online at [www.ose.state.nm.us](http://www.ose.state.nm.us) or call 1-800-WATER-NM to request a free copy.
- [www.toiletology.com](http://www.toiletology.com) is a great source for information about the care and repair of toilets.
- For a list of toilets that meet the most stringent performance requirements, download the Maximum Performance (MaP) testing reports (PDF files): [www.cuwcc.org/uploads/product/MaP-Final-Report.pdf](http://www.cuwcc.org/uploads/product/MaP-Final-Report.pdf)  
[www.cuwcc.org/uploads/product/MaP-Update-No-1-June-2004.pdf](http://www.cuwcc.org/uploads/product/MaP-Update-No-1-June-2004.pdf)
- A list of high-efficiency toilets (dual-flush models and those which use less than 1.6 gallons per flush) is posted as a PDF file at [www.cuwcc.org/uploads/product/HET.pdf](http://www.cuwcc.org/uploads/product/HET.pdf)
- City of Albuquerque, Water Conservation Office, (505) 768-3655, [www.cabq.gov/waterconservation/](http://www.cabq.gov/waterconservation/)
- City of Rio Rancho, Water Conservation Office, (505) 896-8715, [www.ci.rio-rancho.nm.us/utilities.htm](http://www.ci.rio-rancho.nm.us/utilities.htm)
- For a list of replacement toilet flappers for most models of 1.6 gallon toilets, visit the website at [www.tampabaywater.org](http://www.tampabaywater.org). Click on Conservation on the upper right navigation bar and highlight Residential Conservation. Then click on Reports and Documents from the list on the left side. Under Other Documents click on Ultra Low Flow Toilet Flapper Marketing and Implementation Strategies Program. The list is found in Appendix C on pages 35-40.
- [www.h2ouse.org](http://www.h2ouse.org) contains an impressive variety of water conservation information.
- WaterWiser National Water Conservation Clearinghouse, [www.waterwiser.org](http://www.waterwiser.org)

**WATER USE AND  
CONSERVATION BUREAU**  
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# A Waterwise Guide to Ultra-Low-Flow Toilets



**WATER USE AND  
CONSERVATION BUREAU**  
New Mexico Office of the  
State Engineer  
1-800-WATER-NM





## Choose Ultra-Low-Flow for Water Savings



Replacing an old water-wasting toilet with a new ultra-low-flow toilet is one of the best water conservation moves you'll ever make. Ultra-low-flow toilets use 1.6 gallons or less per flush, compared to the 3.5 gallons *or more* per flush used by older toilets. So simply replacing an old toilet with a new, water-efficient model can save thousands of gallons of water per year—and lots of money on your water bill.

Ultra-low-flow (ULF) toilets aren't completely new. In fact, the Federal Energy Policy Act of 1992 requires that all toilets sold for residential use after January 1, 1994, use no more than 1.6 gallons per flush. Today's ULF toilets have been completely redesigned and independently tested for performance and durability. The bottom line: ULF toilets get the job done using less than half the water of older models.

Some municipal water utilities (including the cities of Albuquerque and Rio Rancho) offer a substantial credit on your water bill when you replace an old toilet with a water-efficient one. Check with your local water utility to see if you qualify for a rebate.

## Main Types of Ultra-Low-Flow Toilets

The two most common types of water-conserving toilets are gravity-fed and pressure-assisted. Both types have been engineered to make the bowl more efficient and increase the flow rate of water down the drain.



### Gravity-Fed Toilets

By far, the most common type of toilet found in homes is the gravity-fed toilet. Ultra-low-flow gravity-fed toilets use the natural force of water dropping from the tank to remove waste from the bowl. The mechanics of the basic

gravity-fed toilet haven't changed very much in many years. What has changed is the design of the bowl and the water trapway to increase flush velocity and improve performance.



### Pressure-Assisted

This newer type of toilet, found most often in commercial properties, uses the pressure in the water line to achieve higher flush velocities. A mixture of water and compressed air is stored in a vessel that sits

within the traditional toilet tank. When the flush lever is pushed, 1.6 gallons of pressurized water shoots through the bowl and out the trapway, carrying the waste with it. Because the new models are much quieter than the older pressure-assisted toilets, more of these types of toilets are finding their way into homes. The newest versions operate on less than one gallon of water!

## Recent Changes in Technology

Because of a continuing interest in water conservation, additional innovations in toilet design and functionality are being introduced.



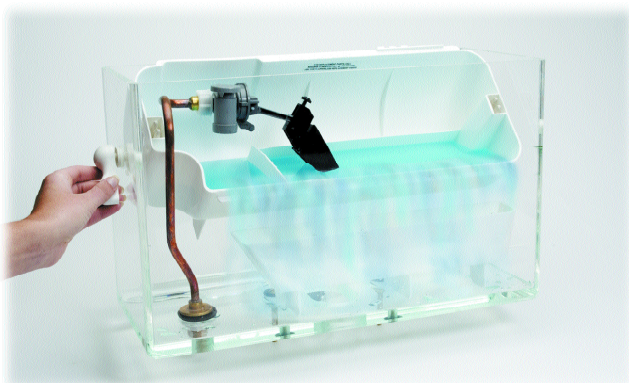
### Dual-flush Models

This new development in toilet technology recognizes that it takes less water to flush away urine than it does to flush bulk waste. Dual-flush toilets have two flush options: the regular flush uses 1.6 gallons and the short flush uses a

gallon or less, depending upon the model. Using the short flush option when appropriate can result in significant water savings—40 to 50 percent less water per flush!

### Flapperless Toilets

One of the latest innovations in toilet technology is the flapperless toilet. As noted elsewhere in this brochure, a leaking or improperly functioning flapper can result in significant water waste. One manufacturer's solution was to design a totally flapperless toilet that employs a separate water-holding container inside the tank. Another manufacturer replaced the traditional flapper with a flushing tower that sits on a durable silicone gasket that won't wear out. Precisely 1.6 gallons of water is released per flush—even if the toilet's handle is held down after the flush begins.



## How To Keep the Flow Low

Unlike a dripping faucet, most toilet leaks are basically invisible and often silent. A leaky toilet flapper valve can quietly send thousands of gallons of water down the drain. To keep toilets performing up to water conservation standards, some routine testing and periodic maintenance is required. Begin by conducting a simple dye test to see if water is leaking from the toilet tank into the bowl.

### The Toilet Dye Test

Just follow these easy steps to find out if your toilet is leaking:

- Lift the lid off the toilet tank.
- Put a few drops of dark-colored food coloring or a dye tablet (available at hardware stores) into the tank.
- After 15 minutes, check the toilet bowl for any signs of dye color. If there's no color in the bowl, there is no water leaking from the tank into the bowl. But if there's color in your bowl, your toilet is leaking.



### Check the Flapper

The flapper is a rubber-like control valve that opens when the toilet is flushed to let water rush from the tank to the bowl. One of the most common reasons a toilet loses water from the

tank to the bowl is a flapper that's not functioning properly, so checking the flapper is a good place to start tracking down a toilet leak. Sometimes a leak can be caused by a buildup of mineral deposits on the flapper and/or the valve seat upon which the flapper sits. Clean the valve seat and flapper with fine steel wool or a plastic cleansing pad to make sure they are both smooth and free of mineral deposits.

Another cause of flapper leaks is the use of bleach-type bowl cleaning tablets in your toilet tank. The tablets not only can lead to a damaged flapper (which then leaks) but may also void your toilet manufacturer's warranty.





### Replacing the Flapper

If cleaning the flapper doesn't fix the leak, it's probably time to replace it. A worn-out flapper is an invitation to water waste because it will never form a tight seal with the valve seat.

Even though many replacement flappers sold at hardware stores and home centers might claim to fit all toilets, there really is no such thing as a "universal" flapper. **Always use an identical factory replacement when replacing a toilet flapper.** If it's not possible to find an exact replacement, make sure the replacement flapper was designed to fit your model of toilet. Also, if it's an adjustable flapper, take the time to make the proper adjustments so the flapper will close after 1.6 gallons of water flows through the tank.



### Other Common Toilet Leaks

In addition to a leaky flapper, common toilet leaks can be caused by an improperly adjusted float ball, a water fill valve that doesn't completely shut off after

filling the tank or an improperly set water level in the tank. For information on how to fix these and other toilet leaks, refer to *Don't Waste a Drop: Finding, Fixing and Preventing Indoor Water Leaks*, published by the New Mexico Office of the State Engineer.

### The Dark Side of Toilet Tank Cleaners

The chlorine (bleach) found in many toilet tank cleaners can eat away the rubber in older toilet flappers. Although the industry is working to make flappers less prone to deterioration by chlorine, one sure way to keep chlorine from eating away a toilet flapper is to replace the toilet tank cleaner with a toilet bowl cleaner.

After all, the toilet bowl is really what you want to keep clean, not the toilet tank.



## What to Look for When Buying a ULF

There are many models of ultra-low-flow (ULF) toilets on the market, so actually selecting one to replace your water-thirsty toilet can sometimes be a bit daunting. Despite some negative stories about the performance of early low-flow toilets back in the 1990s, today's redesigned ULF toilets work as well as (or even better than!) older toilets that used far more water.

It's always a good idea to shop around for the right toilet. The best choice is a toilet that clears the bowl with a single flush and doesn't clog easily. A fully glazed trapway can improve both the flushing performance and the toilet's ability to keep itself clean. The quality of the pottery is important (check for "Grade A" ceramic), as is the flushing mechanism.

Finally, make sure that the toilet's flapper is made of the newest materials that are more resistant to chlorine. (To keep your flapper from wearing out prematurely, avoid using toilet cleaners that go in the tank.)

*Water conservation shouldn't be something we think about only during a drought. As the competition for water grows, let's make conserving our most precious natural resource an everyday part of life in New Mexico.*

