

# Repair Your Leaking Toilets:

## Save Water and Stop Flushing Away Your Water Bill

High water bills are often caused by leaking toilets that waste large amounts of water.

Size of Leak	Amount of Water Waste Per Day	Approximate Cost of Waste Per Day
Small	30 gallons	\$0.40
Medium	250 gallons	\$3.30
Large	Up to 4,000 gallons	As much as \$53

The diagram below illustrates the parts of a toilet. Most water waste is caused by a leaking flapper or a faulty fill valve that stays open. An open fill valve can have water flowing through it at a rate of three to five gallons per minute or 4,000 gallons a day. If you can hear your toilet running loudly, it means you could be wasting large amounts of water. Even if you have a small leak, it is worth the money and time to make necessary repairs.

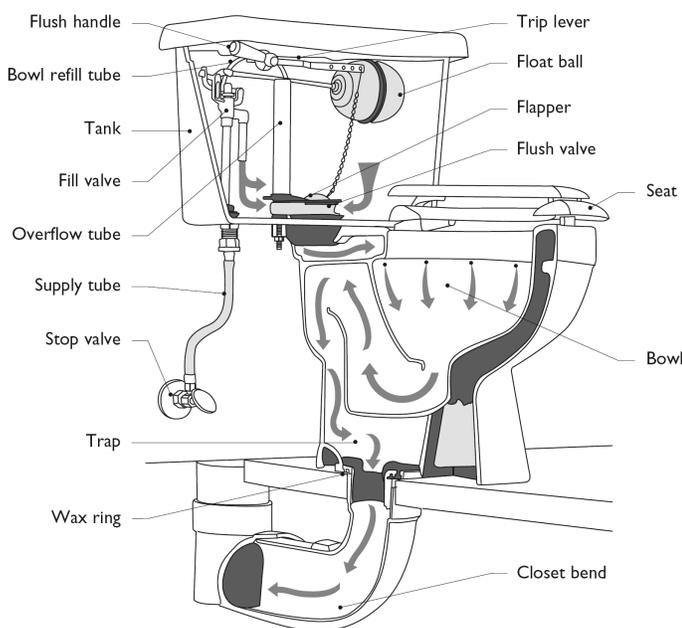


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### WHAT CAUSES A TOILET LEAK?

- The flapper becomes warped or damaged and does not provide a watertight seal on the flush valve. In-tank toilet cleaners can cause flapper damage.
- The flapper, trip lever or chain may lose its alignment with the flush valve, leaving a gap that can cause a leak.
- The flush valve can develop small cuts or other damage that causes a leak between it and the flapper. This is usually caused by grit or sediment.
- The fill valve can become stuck in an open position causing water waste as it flows down the overflow tube. This can happen when your water pressure changes in your home.

### THE TOILET THAT LEAKS WHILE YOU SLEEP

Toilet leaks are often frustrating because they can be intermittent and hard to detect. If you have a toilet that uses a float ball-style fill valve similar to the one in the diagram, higher water pressure overnight in your building or neighborhood can cause the float ball to open and stay open until the pressure decreases. This could cause a leak while you are sleeping.

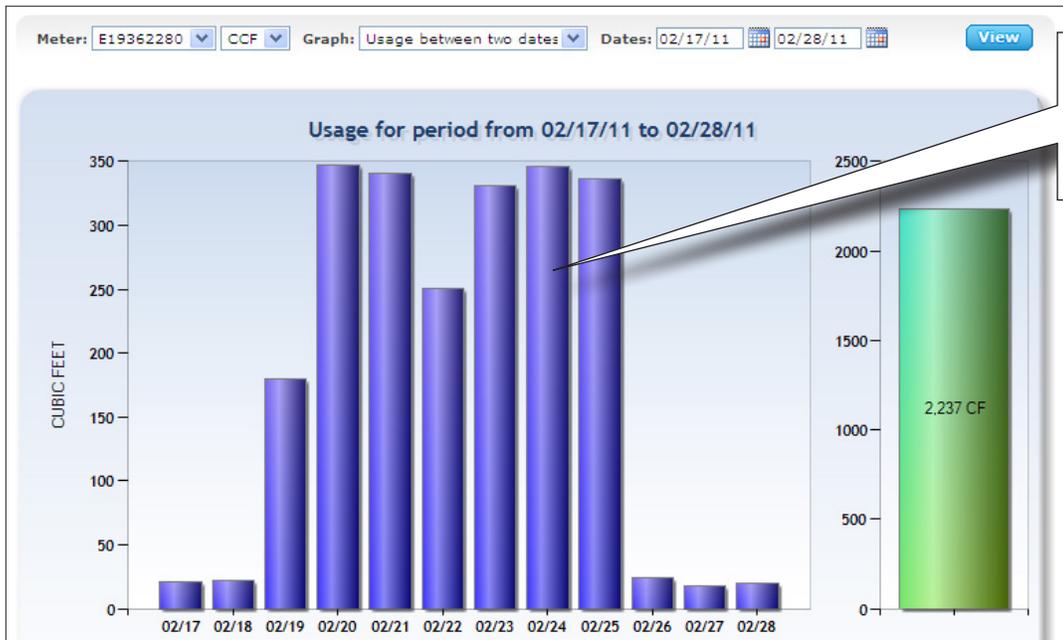
### THE TOILET THAT LEAKS WHILE YOU ARE AWAY

Some people find that their home has been using water while they were away. This is usually because of a toilet leak. If you are going to be on vacation for a week or more, you should turn off the water to each toilet before you leave.

### TOILET CLEANERS CAN CORRODE RUBBER PARTS INSIDE THE TOILET TANK

In-tank toilet cleaners are large tablets of chemicals, or containers of chlorine liquid intended to help keep the toilet bowl clean. These chemicals can wear away toilet flappers and other parts in the toilet tank, voiding the warranty and causing leaks. Some newer flappers are made to be chlorine resistant, but even with newer flappers the use of these in-tank cleaners is still risky.

The damage caused by in-tank cleaners is often the result of a toilet not being flushed for a long period while a house is empty. Without flushing, the chlorine content of the tank water increases and is more likely to wear away the flapper.



**A toilet leak in one NYC residence caused consumption to skyrocket to 2,500 gallons - \$33/day**

## HOW CAN I TEST FOR TOILET LEAKS?

**Listen:** The toilet should make a refill noise only when the tank is refilling after a flush. It should not make a noise at any other time. If your toilet makes a noise that requires you to “jiggle the handle,” then you may have a leak or your flapper may need to be adjusted.

**Look:** A large leak will cause moving water in the bowl long after the tank has refilled from a flush. You may also see water flowing down the sides of the bowl. Rust stains on the inside of the bowl are an indication of corroding metal parts inside the tank caused by a leak.

To check for smaller leaks, place some food coloring in the tank and wait for 15-20 minutes. If color appears in the bowl, you have a leak. The sooner the color appears, the larger the leak. If you are an apartment building owner or manager it is recommended that you perform annual dye tablet tests on all toilets. There are non-toxic leak detection tablets available for this purpose.

**Check your water use online:** DEP is installing a citywide Automated Meter Reading system (AMR) that will read all water meters at least four times a day and can provide an early warning of leaks and high bills. If you have an AMR device installed on your property, you can track your daily water use online by going to [www.nyc.gov/dep](http://www.nyc.gov/dep) and clicking on the blue “My DEP Account” button. Large increases in daily use over time may be a sign of a leak.

## IS THE LEAK CAUSED BY THE FLAPPER OR THE FILL VALVE?

The two most common toilet leaks are caused by the flapper and the fill valve. To check for these leaks, lift the tank lid and look at the back wall of the toilet tank. You will see a water line that marks the level at which water fills the tank. Mark the actual water level with a

pencil. Flush the toilet and watch the tank refill. If the water rises to a level above the pencil mark (and then goes down afterward) then you probably have a flapper leak. If the water level rises to a point below the pencil mark and then rises above it, then you probably have a fill valve that is not working.

## HOW TO STOP TOILET LEAKS

### 1. If Your Toilet Was Manufactured Before 1994:

Consider buying a new high-efficiency toilet (HET) that has the US Environmental Protection Agency (EPA) “WaterSense” logo. These high-performing, water-saving toilets can save you approximately \$30-40 per year for each person in your home or apartment, in addition to eliminating leaks and improving flushing power.



WaterSense toilets help prevent toilet leaks by:

- Using flappers that are resistant to chlorine corrosion and won’t leak easily
- Using improved fill valves that will not leak like old-style ball cock/float valves

Look for the WaterSense label when you shop or get a list of qualified toilets from EPA’s WaterSense website at <http://www.epa.gov/watersense/>

### 2. If Your Toilet Was Manufactured After 1994

If your toilet was manufactured after 1994 then you probably have a toilet that uses only 1.6 gallons per flush. You can confirm this by looking for a “1.6 gpf/6 lpf” imprint on the back top surface of the bowl behind the back of the toilet seat. You might still want to consider buying a new WaterSense HET for better flushing performance. It could save you about \$7 per person per year.

You might want to consider other ways to fix your toilet leak, such as:

- **Replacing the flapper:** There are some common replacement flappers on the market for water saving toilets, but not all of them will fit your toilet. You should always make sure that the new flapper is adjusted correctly for your water-saving toilet. Look for products with a five or ten-year warranty. You can find a list of replacement flappers at [www.toiletflapper.org](http://www.toiletflapper.org)
- **Replacing the flapper and fill valve:** If the problem is a faulty fill valve, you can replace it yourself or call a licensed plumber to make the repair. Do not replace an old fill valve that has a float ball with a new fill valve that has a float ball. Instead, use a new piston-valve type fill valve. This device is often called a “Fluidmaster valve” and is manufactured by Fluidmaster, Korkey, and American Standard.

There are also fill valve products that help to prevent the constant filling and draining of a toilet tank that is often caused by a toilet flapper leak. These products guard against constant refilling by ensuring that a leaking tank is refilled only when someone flushes the toilet. If the flapper leaks, these products will allow the tank to drain first and will ensure that the tank remains empty, rather than constantly refilling. The next time someone flushes the toilet they will have to flush twice; once to refill the tank and a second time to flush the toilet. This prevents water waste caused by a constantly refilling toilet. Fluidmaster’s “Leak Sentry Pro 400LS” ([www.fluidmaster.com](http://www.fluidmaster.com)) and the “HydroClean” ([www.gomjsi.com](http://www.gomjsi.com)) are both examples of these types of fill valves. More products will likely follow as water rates increase.

Please note: DEP does not endorse any of these products.

## FLUSHOMETER TOILETS

About 30% of the residential toilets in New York City do not have tanks but use a hand valve called a “flushometer” attached to a pipe coming right out of the wall. This type of toilet does not have many moving parts but leaks can occur. If your house or apartment has a flushometer toilet, take the following precautions:

- If you see moving water in the bowl when the toilet has not been flushed, the valve is leaking and needs to be replaced or repaired.
- If you turn off the water to your house or apartment, do not flush the toilet. Be sure to flush the toilet once or twice after the water has been turned back on to make sure that air has been vented from the system and the flushometer valve is opening and closing properly.
- So-called “phantom flushes” can be caused by pressure changes in the building, and should be investigated by a licensed plumber.

## SOURCES OF ADDITIONAL INFORMATION

Go to [www.nyc.gov/dep](http://www.nyc.gov/dep) to track your water use online through DEP’s Automated Meter Reading (AMR) system, and obtain detailed information about toilet repairs, water conservation and New York City’s water and wastewater treatment systems.

Learn more about WaterSense Program certified high-efficiency toilets: [www.epa.gov/watersense](http://www.epa.gov/watersense)

To find a replacement flapper for your toilet: [www.toiletflapper.org](http://www.toiletflapper.org)

## PURCHASING LEAK DETECTION TABLETS

AM Conservation Group:  
<http://amconservationgroup.com/index.asp>

New Resources Group:  
<http://www.nrgideas.com/> <http://www.nrgideas.com/>

Niagara Conservation:  
<http://www.niagaraconservation.com/>

Pollard Water:  
<http://www.pollardwater.com/Default2.asp>



Bill de Blasio  
Mayor

Vincent Sapienza, P.E.  
Acting Commissioner

New York City Department of Environmental Protection  
59-17 Junction Boulevard, Flushing, NY 11373

Visit us online at [nyc.gov/dep](http://nyc.gov/dep)