



FACT SHEET

COMPONENTS: WATER FIXTURES

Description

Although mandated by code, selection of a reliable low flow toilet is critical to continued affordability, by ensuring fewer costs due to repair. The impact of energy savings from low flow faucets and showers can not be overemphasized as a simple and inexpensive win-win, saving energy and water with an immediate payback. The following identifies and makes recommendations on the economic, energy, and environmental implications water fixtures.

Recommendations

The following recommendations are for water fixtures intend for indoor water use:

- Use low flow toilets. 1.5 gallons per flush (gpf)
- Use low-flow kitchen faucets. 2.5 gallons per minute (gpm)
- Use lavatory faucets with flow restrictors for a maximum rate of .5 gpm
- Use low-flow showerheads. 2.0 gpm

Criteria Summaries

Cost: The lack of performance of low-flow toilets since mandated by Congress has resulted in continued product scrutiny and enhanced performance at all price levels. To ensure good water conservation is a result of these requirements, high quality fixtures should be used. Model options utilizing vacuum assisted, pressure assisted, or gravity toilets are available with a minimal first cost increase of \$50 to \$75 per unit. They can dramatically reduce water use by eliminating double flushing and have a payback of five to ten years. Aerating and low-flow shower heads and faucets have minimal increase in first cost and are widely available.

Energy: A low flow rate on faucets and showers reduces energy consumption associated with water heating and have an almost immediate payback on the minimal additional cost of installing aerating heads. A low-flow shower head for example which reduces water flow from 2.5 gpm to 1.5 gpm saves 35% annually on energy and water consumption. A home with an electric water heater could save \$60 annually or \$600 over a ten year period. A natural gas water heater could save \$30 annually or \$300 dollars in ten years.

Water: Water consumption is dramatically effected by installation of low flow fixtures. Reducing faucet flow rates from 2.2 gpm to 1.5 gpm leads to a savings of over 5000 gallons of water annually under normal use. Similiarly, shower heads with reduced flow rates from 2.5 gpm to 1.5 gpm use 40% less water saving up to 7300 gallons a year.

Water Consumption Comparison Charts

FAUCET

Flow rate	2.2gpm	2.0gpm	1.5gpm	0.25gpc
For water use only				
Annual water use (gallons)	17,160	15,600	11,700	3,900
Annual water savings		1,560	5,460	13,260
Annual water cost	\$69	\$62	\$47	\$16
Lifetime water cost	\$550	\$500	\$380	\$130
For electric water heating				
Annual Energy Use (kWh)	970	890	700	310
Annual Energy Cost	\$71	\$65	\$51	\$23
Lifetime energy cost	\$708	\$650	\$511	\$226
Lifetime Energy and Water Cost Savings over 2.2gpm		\$58	\$197	\$482
For gas water heating				
Annual Energy Use (therms)	54	50	42	24
Annual Energy Cost	\$46	\$43	\$36	\$20
Lifetime energy cost	\$461	\$427	\$358	\$205
Lifetime Energy and Water Cost Savings over 2.2gpm		\$34	\$102	\$256
All water calculations are based on \$4/1000 gallons water. Energy cost estimates based on \$0.853 per therm and \$0.073 per kWh. Lifetime for fixtures is 10 years. Consumer use rates from the U.S. Department of Energy.				

SHOWERHEAD

Flow rate	2.5gpm	2.2gpm	1.5gpm
For water use only			
Annual water use (gallons)	18,250	16,060	10,950
Annual water savings		2,190	7,300
Annual water cost	\$73	\$64	\$44
Lifetime water cost	\$590	\$520	\$350
For electric water heating			
Annual Energy Use (kWh)	2370	2120	1540
Annual Energy Cost	\$173	\$155	\$112
Lifetime energy cost	\$1,730	\$1,548	\$1,124
Lifetime Energy and Water Cost Savings over 2.5 gpm		\$183	\$606
For gas water heating			
Annual Energy Use (therms)	131	120	94
Annual Energy Cost	\$112	\$102	\$80
Lifetime energy cost	\$1,117	\$1,024	\$802
Lifetime Energy and Water Cost Savings over 2.5 gpm		\$94	\$316
All water calculations are based on \$4/1000 gallons water. Energy cost estimates based on \$0.853 per therm and \$0.073 per kWh. Lifetime for fixtures is 10 years. Consumer use rates from the U.S. Department of Energy.			

TOILET

Flow rate-gallons/flush	3.5	2	1.5
For water use only			
Annual water use (gallons)	27,300	15,600	11,700
Annual water savings		11,700	15,600
Annual water cost	\$109	\$62	\$47
Annual cost savings		\$47	\$62
10-year water cost	\$1,092	\$624	\$468
10-year cost savings		\$468	\$624
All water calculations are based on \$4/1000 gallons water. Energy cost estimates based on \$0.853 per therm and \$0.073 per kWh. Lifetime for fixtures is 10 years. Consumer use rates from the U.S. Department of Energy.			