

Have you ever wondered how many glasses of water Americans drink every day? Do you know how many professionals are employed in water and wastewater treatment in the U.S.? How many times would the total miles of water pipeline and aqueducts in the U.S. and Canada circle the earth? The answers to these questions and other interesting and fun water/wastewater facts, reprinted here with the permission of AWWA, are presented in Tip Sheet No. 13. Use them to enliven your presentations and enlighten the public on the vital services water and wastewater professionals provide.

PE TIP SHEET NO. 13:

Stats on Tap

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U.S Water System Basics

- ◆ There are more than 55,000 water systems in the United States, processing nearly 34 billion gallons of water per day. (United States Environmental Protection Agency)
- ◆ In 1996 approximately 26,045 workers were employed in water treatment only; in wastewater and treatment combined: 98,000 (United States Bureau of Labor Statistics)
- ◆ Number of private wells in the U.S.: Approximately 23 million (USEPA)

Surface Water vs. Ground Water

- ◆ 47 percent of the US population uses surface water; 53 percent of the US population uses ground water. (USEPA)
- ◆ Groundwater is generally safer than surface water for drinking because of the filtration and natural purification processes which take place in the ground. These processes become ineffective owing to sewage, fertilizers, toxic chemicals and road salt, which seep into the ground. (Environment Canada)

Miles of Pipes

- ◆ The distribution network for large water systems in the U.S. comprises about 600,000 miles of pipes.
- ◆ Within the United States and Canada, the total miles of pipeline and aqueducts equal approximately one million miles. This length would be adequate to circle the earth 40 times.

Consumption and Conservation

- ◆ Americans drink more than 1 billion glasses of tap water per day.
- ◆ On average, 50 to 70 percent of home water is used outdoors for watering lawns and gardens.
- ◆ Daily indoor per capita water use in the typical single family home with no water-conserving fixtures is 74 gallons. Here is how it breaks down:

Use	Gallons per Capita	Percentage of Total Daily Use
Showers	12.6	17.3%
Clothes Washers	15.1	20.9%
Dishwashers	1.0	1.3%
Toilets	20.1	27.7%
Baths	1.2	2.1%
Leaks	10.0	13.8%
Faucets	11.1	15.3%
Other Domestic Uses	1.5	2.1%

By installing more efficient water fixtures and regularly checking for leaks, households can reduce daily per capita water use by about 30% to about 51.9 gallons per day Here's how it breaks down for households using conservation measures:

Use	Gallons per Capita	Percentage of Total Daily Use
Showers	10.0	20.1%
Clothes Washers	10.6	21.4%
Toilets	9.6	19.3%
Dishwashers	1.0	2.0%
Baths	1.2	2.4%
Leaks	5.0	10.1%
Faucets	10.8	21.9%
Other Domestic Uses	1.5	3.1%

(1999 Residential Water Use Summary, American Water Works Association)

If all U.S. households installed water-saving features, water use would decrease by 30 percent, saving an estimated 5.4 billion gallons per day. This would result in dollar-volume savings of \$11.3 million per day or more than \$4 billion per year.

- ◆ Water-conserving fixtures installed in U.S. households in 1998 alone save 44 million gallons of water every day, resulting in total dollar-value savings of more than \$33.6 million per year.
- ◆ Average household water use annually: 127,400 gallons
- ◆ Average daily household water use: 350 gallons
- ◆ Approximately 339,000 million gallons per day (Mgal/d) of freshwater (about one quarter of the national renewable supply) was withdrawn during 1990 for use by the nation's homes, farms, and industries, and about 220 billion gallons per day was returned to streams after use. The withdrawals during 1990 were about 7 percent less than during 1980, the maximum year

reported, and about the same as during 1985. Some reasons for the decline are because of active conservation programs, new technologies requiring less water, higher costs to obtain water, and the enhanced awareness by the general public to water resources. (USGS)

- ◆ In 1990, the State of California received 3,740 Mgal/d; Texas 2,310; Florida 1,250; New York 1,890. In comparison, The Virgin Islands received 1.0 Mgal/d; Vermont 27; Alaska 30. (USGS)

Health and Safety

- ◆ Today, utilities must regularly test for 103 contaminants.
- ◆ According to the U.S. Environmental Protection Agency, nearly 90 percent of today's drinking water exceeds federal standards.
- ◆ In 1900, 25,000 people died from typhoid in the United States alone. Thanks to chlorine, typhoid deaths in the U.S. dropped to fewer than 20 in 1960. Chlorine has also helped wipe out dysentery and cholera. (USEPA).
- ◆ The expected (mean) distribution system capital needs for U.S. water utilities over the next 20 years is \$325 billion.
- ◆ The reauthorization of the SDWA in 1996 allowed the EPA and water suppliers to target the known threats to public health for the first time, such as *cryptosporidium*, lead, arsenic, radon, and disinfection by-products.
- ◆ In 1900 there were 36 deaths from typhoid per 100,000 population. By 1950 the typhoid death rate had dropped to 0.1 per 100,000. The widespread use of chlorine made the difference. (*Water Treatment Through The Ages*, George E. Symons)
- ◆ People should consume eight glasses of water per day, and even more than that during exercise.

AWWA Holiday Drinking Water Factoids

- ◆ It takes about 4,776 gallons of water to raise a Christmas tree. To raise the 35 million Christmas trees U.S. families enjoy each year, a total of 167 billion gallons is required.
- ◆ If mothers refresh their floral arrangements and flowering plants during the Mothers' Day week, they will use 2,835,000 gallons of water. That's equivalent to the amount needed to supply a week's worth of water to 1,157 households.
- ◆ After Thanksgiving dinner in 1999, 16.4 million Americans will watch football. At halftime, American toilets will flush 16.4 million times and use 48.5 million gallons of water. Water efficient toilets would save us 22.3 million gallons of water. That's the same amount of water needed to fill 1,476 swimming pools.

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