

SAN ANTONIO WATER and YOU

WATER IS LIFE

Water is of major importance to all living things. In some organisms, up to 90 percent of their body weight comes from water. Up to 60 percent of the human body is water: the brain is composed of 70 percent water, blood is 82 percent water, and the lungs are nearly 90 percent water.

The unique qualities and properties of water are what make it so important and basic to life. The cells in our bodies are full of water. The excellent ability of water to dissolve so many substances allows our cells to use valuable nutrients, minerals, and chemicals in biological processes. Water's "stickiness" (from surface tension) plays a part in our body's ability to transport these elements all through ourselves. The carbohydrates and proteins that our bodies use as food are metabolized and transported by water in the bloodstream. No less important is the ability of water to transport waste material out of our bodies.



TEXAS WATER USE

Water is essential to life. However, many times people take this important resource for granted. Humans expect it to be clean and abundant, but they do not take the necessary precautions to protect or conserve it. Without an abundant supply of good quality water, San Antonio, as well as the entire state of Texas, could suffer an environmental and financial crisis in the future.

Texas is the second largest and the third most populated state in the United States supporting approximately 17 million people. As the state continues to prosper into the new century, the growing number of people will most likely put a strain on the state's existing ground and surface water. Bexar county alone has more than 1.5 million people, and its population is expected to double over the next fifty years. In Texas, current water demand is 75% of existing capacity and in some basins, demand is approaching 100% of available supplies. Even with proactive efforts, demand for water in Texas will eventually exceed existing water supplies.

Municipal water use accounts for most of the water used in the state of Texas. Municipal water use generally includes water for households and businesses, restaurants and public offices, sanitation and landscaping and of course fire protection. Both the amount and type of water used depends a great deal on geographic location. Houston uses 12% of the overall municipal use, Dallas 9%, San Antonio 5%, Austin 3%, Fort Worth 3% and El Paso 3%. 65% is used by other people in the state.

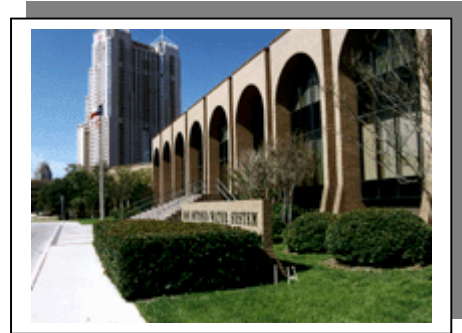
WATER FACTS ABOUT SOUTH/CENTRAL TEXAS

- ◆ San Antonio, Austin, San Angelo and Del Rio are the major population centers of this region.
- ◆ All of the largest springs in Texas are located in this region including the two largest- the San Marcos and Comal springs.
- ◆ San Antonio, the third largest metropolitan area in the state, currently is the only major city in the U.S. that obtains its entire water supply from a single aquifer.
- ◆ The longest dam in Texas is the 8-mile long dam at Twin Buttes Reservoir in San Angelo.
- ◆ The Medina Dam is the largest all-concrete dam in the state. It was completed in 1913 and created Medina Lake, at that time the largest reservoir in the state.
- ◆ The oldest continuously used irrigation system in the U.S. is the Mission San Francisco de la-Espada aqueduct in San Antonio. Built between 1740-1745, it still conveys water from the San Antonio River to the mission's crops.

SAN ANTONIO'S WATER SYSTEM

SAWS is a public utility owned by the city of San Antonio. It was created in May 1992 through the consolidation of three predecessor agencies:

- City Water Board (the previous city-owned water supply utility)
- City Wastewater Department (the city government department responsible for sewage collection and treatment)
- Alamo Water Conservation and Reuse District (an independent city agency created to develop a system for reuse of treated wastewater)



In 1995, the San Antonio Water System served approximately 1 million people in the urbanized part of Bexar County. This population included approximately 260,000 separate customers. SAWS' population is projected to increase to 2.2 million by 2050, and its water demand will roughly double over that period.

SAWS' service areas are established by its permits from state regulatory authorities. The service area for water supply includes most (but not all) of the City of San Antonio, several suburban municipalities, and adjacent parts of Bexar County. In addition to serving its own retail customers, SAWS also provides wholesale water supplies to several smaller utility systems within this area boundary.

A larger and somewhat different area, following natural watersheds, is defined for wastewater collection and treatment. SAWS is the only sewage treatment agency in this area, and it charges a fee to the military bases and suburban cities which maintain their own wastewater collection systems. SAWS also provides collection and treatment services by contract to developments outside its defined service area, to avoid unnecessary proliferation of state wastewater discharge permits.

WATER CONSERVATION

On the average, every American uses about 100 gallons of water a day. That makes daily water consumption in the U.S. alone over 372 billion gallons per day. San Antonio is no different. Our city is the largest city in the U.S. to receive its drinking water exclusively from an aquifer.

SAWS is a permitted water system with overall regional limits to pumping. Translated into English, this means we're only allowed so much water from the Edwards Aquifer. That's why it's so important to save it. Conservation is the cheapest source of water. Water we save is water we don't have to buy. So it's important we do everything we can to decrease our water consumption. Plumbing fixture retrofits, watersaver landscapes, and improved habits are all ways we can make low water use a part of our everyday life.

A toilet, for instance, is the fixture that uses the most water in an average household, usually around 26% a day. Old toilets can use from 3.5 to 7 gallons per flush. Low flow toilets used in new construction or sold at the hardware store today are 1.6 gallon capacity. This gets the job done just as well, but with less water.

Did you know that a five-minute bath uses more water than a five-minute shower? Baths can use up to 50 gallons of water whereas a shower with a low flow showerhead would only use 10 gallons. Low flow showerheads can save over 2 gallons per minute.



We should all put voluntary restrictions on our water usage around the house. But in times of drought, additional water restrictions are needed to ensure that the aquifer remains at a safe level. When the level gets too low, mandatory water conservation measures are announced in order to get the community to take extra water saving precautions. During an especially hot and dry period, it doesn't take long for these measures to be implemented.

The Aquifer Management Plan restricts water use based on specific levels of the Edwards Aquifer. They include:

STAGE 1

Stage One Alert begins when the Aquifer level reaches 650 feet mean sea level at the monitored well.

STAGE 2

Stage Two Alert begins when the Aquifer level reaches 640 feet mean sea level at the monitored well.

STAGE 3

Stage Three Alert begins when the Aquifer level reaches 630 feet mean sea level at the monitored well.

(For more information on the measures implemented at each stage, go to the SAWS web site at www.SAWS.org.)

HOW TO CONSERVE

For approximately \$10 to \$20, the average homeowner can install two low-flow showerheads, place dams or bottles in the toilet tanks, install low-flow aerators on the faucets, and repair dripping faucets and leaking toilets. This could save 10,000 to more than 25,000 gallons per year for a family of four, and would pay for itself in less than a year! Even more could be saved if good outdoor water conservation is practiced for the lawn and garden.

Here are some more great watersaving tips to help you conserve water and lower your water bill:

In The Bathroom...

1. Install a low-flow shower head that limits the flow from the shower to less than three gallons per minute.
2. Take short showers and install a cutoff valve, or turn the water off while washing and back on again only to rinse.
3. Take a shower instead of taking a bath. Showers with low-flow shower heads often use less water than taking a bath.
4. Reduce the level of the water being used in a bathtub by one or two inches if a shower is not available.
5. Shampoo hair in the shower. Shampooing in the shower takes only a little more water than is used to shampoo hair during a bath and much less than shampooing and bathing separately.
6. When building a new home or remodeling a bathroom, install a new low-volume flush toilet that uses only 1.6 gallons per flush.
7. Test toilets for leaks. Add a few drops of food coloring or a dye tablet to the water in the tank, but do not flush the toilet. Watch to see if the coloring appears in the bowl with a few minutes. If it does, the toilet has a silent leak that needs to be repaired.
8. Use a toilet tank displacement device such as a toilet dam or bag. Also, a plastic bottle can be filled with stones or water, recapped, and placed in the toilet tank. These devices will reduce the volume of water in the tank but will still provide enough for flushing. (Bricks are not recommended since they eventually crumble and could damage the working mechanism.) Displacement devices are not recommended with new low-volume flush toilet.
9. Never use the toilet to dispose of cleansing tissues, cigarette butts, or other trash. This wastes a great deal of water and also places an unnecessary load on the sewage treatment plant or septic tank.
10. Do not use hot water when cold will do. Water and energy can be saved by washing hands with soap and cold water. Hot water should be added only when hands are especially dirty.



11. When brushing teeth, turn the water off until it is time to rinse.
12. Do not let the water run when washing hands. Water should be turned off while washing and scrubbing and be turned on again to rinse. A cutoff valve may be installed on the faucet.
13. When shaving, fill the lavatory basin with hot water instead of letting the water run continuously.
14. Install faucet aerators to reduce water consumption.

In The Kitchen...

15. Scrape the dishes clean instead of rinsing them before washing. There is no need to rinse unless they are heavily soiled.
16. Use a pan of water (or place a stopper in the sink) for washing and rinsing pots, pans, dishes, and cooking implements, rather than turning on the water faucet each time a rinse is needed.
17. Never run the dishwasher without a full load. This practice will save water, energy, detergent, and money.
18. Use the garbage disposal sparingly or start a compost pile.
19. Keep a container of drinking water in the refrigerator. Running water from the tap until it is cool is wasteful. Better still, both water and energy can be saved by keeping cold water in a picnic jug on a kitchen counter to avoid opening the refrigerator door frequently.
20. Use a small pan of cold water when cleaning vegetables, rather than letting the water run over them.
21. Use only a little water in the pot and put a lid on it for cooking most food. Not only does this method save water, but food is more nutritious since vitamins and minerals are not poured down the drain with the extra cooking water.
22. Always keep water conservation in mind, and think of other ways to save in the kitchen. Small kitchen savings from not making too much coffee or letting ice cubes melt in a sink can add up in a year's time.



For Outdoor Use...

1. Water only when needed. Look at the grass, feel the soil, or use a soil moisture meter to determine when to water.
2. Do not over-water. Soil can absorb only so much moisture and the rest simply runs off. A timer will help, and either a kitchen timer or an alarm clock will do. One and a half inches of water applied once a week in the summer will keep most Texas grasses alive and healthy.

3. Water lawns early in the morning during the hotter summer months. Otherwise, much of the water used on the lawn can simply evaporate between the sprinkler and the grass.
4. To avoid excessive evaporation, use a sprinkler that produces large drops of water, rather than a fine mist. Sprinklers that send droplets out on a low angle also help control evaporation.
5. Set automatic sprinkler systems to provide thorough, but infrequent watering. Pressure-regulating devices should be set to design specifications. Rain shutoff devices can prevent watering in the rain.
6. Use drip irrigation systems for bedded plants, trees, or shrubs, or turn soaker hoses upside-down so the holes are on the bottom. This will help avoid evaporation.
7. Forget about watering the streets or walks or driveways. They will never grow a thing.



RAINWATER HARVESTING

Why waste tap water watering plants when rainwater works better? All you have to do is harvest it! Rainwater harvesting is capturing and storing rainfall to irrigate plants and animals. All you need for harvesting is a good rainstorm and something to collect it in. Your system can be simple, using contoured areas so that water flows directly to plants; or sophisticated, featuring storage systems that can contain captured water for later use, such as rain barrels.