

CONSERVING WATER IS GOOD FOR BUSINESS

- American Airlines Maintenance Base in Fort Worth implemented a program to recycle water and minimize hazardous waste. They expanded a reverse-osmosis system to treat 40 million gallons of wastewater, converted an existing treated-effluent tank into a reverse-osmosis tank, and upgraded an outdated automation control system. The project reduced total water usage by 24 to 36 percent and reduced costs by almost \$1 million. In addition, the amount of hazardous waste in one year was reduced by more than 50 percent.
- Freescale in Austin uses Ultra Pure Water for manufacturing microchips. In order to save millions of gallons of wastewater and potable water, Freescale implements a rigorous reuse and recycling program. Since 2006, Freescale has reduced wastewater by more than 50 percent and reduced potable water by more than 51 percent. The high percentage of water savings comes from operational processes that reuse and recycle the



majority of process water. In 2007, Freescale saved more than 160 million gallons of water and more than 90 million gallons of wastewater through conservation efforts.

- The Frito-Lay plant in San Antonio has saved 1 billion gallons of water a year since implementing conservation efforts in 1999. Frito-Lay recycles the water used to make potato and corn snacks and has reduced fresh water use in these processes by 35 to 50 percent.

REASONS TO CONSERVE WATER

Will conserving water hinder business profitability? No. Conserving water can help increase profits. Some of the financial benefits to consider when evaluating water conservation are:

1. **Reduced costs**—water costs account for 1–2 percent of a business' overhead. Saving water can help reduce overhead costs.
2. **Increase in future water prices**—water prices are set to rise above inflation. Saving water now will reduce costs in the future.
3. **Production efficiency**—using water efficiently will make additional water available for future production.
4. **Tax benefits**—many government agencies and water utilities provide rebates, grants, and tax relief to encourage water conservation. Tax benefits keep money where it belongs, in your pocket.

In Texas, various tax exemptions can be given for:

- Rainwater harvesting systems
- Water recycling and reuse systems
- Desalination systems
- Wastewater systems certified by the Texas Commission on Environmental Quality
- Brush control equipment designed to increase water availability

For more information about water conservation, contact your local water supplier or the Texas Water Development Board.

Sources:
 American Water Works Association, www.awwa.org.
 East Bay Municipal Utility District, 2008, Watersmart guidebook: Oakland, East Bay Municipal Utility District, 242 p.
 Seneviratne, M., 2007, A practical approach to water conservation and industrial facilities: Burlington, Mass., Butterworth-Heinemann, 380 p.
 Vickers, A., 2001, Water use and conservation: Amherst, Mass., Waterplow Press, 464 p.



Texas Water Development Board

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Visit the following Web sites for additional information.

www.wateriq.org

www.epa.gov/watersense

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WATER CONSERVATION FOR INDUSTRIES, BUSINESSES, AND INSTITUTIONS



USING WATER EFFICIENTLY makes good business sense. With rising costs of operations for many businesses, conserving water is one way to cut costs without compromising products or services. Texas' soaring population and dwindling water supplies have prompted communities to begin conservation programs, many of which provide financial incentives to businesses that establish water-saving practices.

Numerous businesses in Texas have already instituted significant conservation measures. As a result, they have reaped both financial and environmental benefits, demonstrating that water conservation can improve the bottom line.

GETTING STARTED

Your first priority should be to perform a water audit of your building, including the grounds. Water audits vary from business to business and can range from simple to extensive. For information on performing a water audit for your business or institution, visit the TWDB Web site:

www.twdb.state.tx.us/assistance/conservation/Municipal/ici.asp

Information is also available on these Web sites:

Alliance for Water Efficiency

www.allianceforwaterefficiency.org/Water_Audit_Process_Introduction.aspx

American Water Works Association

www.awwa.org/Resources/Content.cfm?ItemNumber=590

WATER SAVER CHECKLIST

Choose water-efficient appliances to help reduce water use. Other suggestions on where water can be conserved are listed below.

Maintenance

- Sweep instead of using a hose
- Use a high-pressure nozzle when a hose is necessary
- Clean windows only when needed

Building Operations

- Check for and repair leaks
- Meter all major uses separately
- Read water meters regularly to track potential leaks
- Shut off water to unused areas
- Keep employees informed
- Use automatic shut-off valves for equipment that is not in operation
- Examine ways to modify processes
- Install self-closing, air-cooled water fountains
- Use gray water for irrigating landscape

Food Service

- Provide water only on request
- Thaw food in refrigerator or microwave
- Scrape dishes instead of rinsing
- Install high-pressure, low-volume spray washers
- Replace worn washers
- Wash full loads only
- Reuse final rinse water for prewash or garbage disposal
- Install dishwashers with automatic shut-off valves
- Use air-cooled or flake ice machines
- Don't use running water to melt ice

Laundries

- Wash full loads only
- Recycle final rinse water for pre-wash
- Install sub-meters to track potential leaks
- Recover steam condensate and/or vented flash steam

Process Use

- Eliminate once-through cooling
- Meter water use
- Recycle and reuse water
- Install automatic shut-off valves
- Use air-cooled systems
- Alter process filtering to maximize product recovery
- Separate water process streams

Restrooms

- Check for and repair leaks
- Remind users to conserve
- Retrofit older fixtures
- Install low-flow showerheads and faucets
- Install metered or sensor faucets
- Install high-efficiency toilets and waterless urinals
- Consider foam flush or waterless toilets

Vehicle Washing

- Wash vehicles only when needed
- Adjust solenoids, valves, nozzles, and equipment to minimize water use
- Use high-pressure washes
- Inspect and replace worn jets and parts
- Install water recycling equipment
- Consider waterless washing techniques

Cooling and Heating

- Meter and record water use
- Check for and repair leaks

Cooling Systems and Towers

- Install a recirculating system
- Reuse blowdown for irrigation
- Reuse treated water for makeup water
- Use air cooling where possible
- Consider evaporative cooling
- Consider hybrid cooling towers
- Consider side-stream filtration or pulse power treatment

Boilers and Heaters

- Check and replace steam traps regularly
- Reuse condensate and blowdown

Pools and Spas

- Check for and repair leaks
- Cover pools when not in use
- Lower the temperature when not in use
- Keep filters clean to reduce backwash
- Adjust pool levels to minimize splash out
- Consider alternative water treatments

X-ray Processing/Labs

- Equip x-ray processors with shut-off valves
- Reduce the flow rate to the processors to a rate of 2 gallons per minute or less
- Eliminate continuous water streams for aspiration of liquids or other purposes
- Eliminate single-pass cooling of instrument analyzers
- Use sterilizers that re-circulate cooling water
- Install silver recovery systems
- Install flow restrictors on water-ring vacuum pumps or replace with oil-ring pumps

Landscape

- Check for and repair irrigation system leaks
- Use drought-tolerant native plants and turf
- Adjust sprinklers to irrigate landscape only
- Water deeply but infrequently
- Water during early morning or evening hours
- Install timers and moisture sensors
- Use drip irrigation
- Use fertilizer sparingly
- Install shut-off nozzles on hoses

