

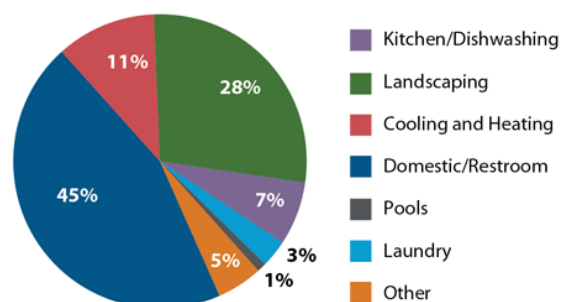
Saving Water in

Educational Facilities

Commercial and institutional buildings use a large portion of municipally supplied water in the United States. With so many businesses making up the commercial and institutional sector, there are great opportunities to conserve water. *WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities* promotes water-efficient techniques that can be applied across a wide range of facilities with varying water needs.

Approximately 6 percent of total water use in commercial and institutional facilities takes place in educational facilities, such as schools, universities, museums and libraries in the United States.¹ The largest uses of water in educational facilities are restrooms, landscaping, heating and cooling, and cafeteria kitchens.

End Uses of Water in Schools



Created by analyzing data from: New Mexico Office of the State Engineer, American Water Works Association (AWWA), AWWA Research Foundation, and East Bay Municipal Utility District.

THE BUSINESS CASE FOR WATER EFFICIENCY

Over the past 10 years, the costs of water and wastewater services have risen at a rate well above the consumer price index. Facility managers can expect these and other utility costs to continue to increase in order to offset the costs of replacing aging water supply systems.



Operating costs and environmental impacts are influenced by water use. Industry estimates suggest that implementing water-efficient practices can decrease operating costs by approximately 11 percent and energy and water use by 10 and 15 percent, respectively.²

Many campuses have found it necessary to expand their facilities in order to keep up with the needs of a growing student body. Today's students are also looking for schools to demonstrate sustainable principles. Additionally, meeting voluntary green standards such as LEED® certification can be achieved through water efficiency in building design.

New building codes often require installation of water-efficient plumbing fixtures and appliances, which use at least 20 percent less water than standard models.

Putting Water Efficiency to Work

A university in Texas focused on recovering and reusing alternative water sources to reduce its use of municipally supplied water. This allowed the university to successfully decrease its campus' potable water use from 1 billion gallons to 668 million gallons, or more than 33 percent. The onsite alternative water sources identified include air handler condensate, single-pass cooling water, rainwater, and foundation groundwater.

When upgrading educational facilities, the age and functionality of some water-using technology may call for replacement or retrofit. If is necessary to replace this equipment, upgrading to water-efficient models can save money, with a relatively short payback period.

Implementing water-efficient practices on campus grounds and fields can reduce both water bills and maintenance costs.

WaterSense at Work provides guidance that will help educational facilities get an A+ in water efficiency.

USING WATERSENSE AT WORK

More information on operations, maintenance, and user education of equipment and processes within educational

facilities can be found in the following sections of *WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities*:

- Section 1: Getting Started
- Section 2: Water Use Monitoring and Education
- Section 3: Sanitary Fixtures and Equipment
- Section 4: Commercial Kitchen Equipment
- Section 5: Outdoor Water Use
- Section 6: Mechanical Systems
- Section 7: Laboratory and Medical Equipment
- Section 8: Onsite Alternative Water Sources

Look for the Label



- Install WaterSense labeled showerheads, toilets, bathroom faucets, and flushing urinals where appropriate.
- WaterSense labeled products have been independently certified to be at least 20 percent more water-efficient and perform as well or better than standard models.
- Check automatic sensors on faucets, toilets, and urinals to ensure they are operating properly and avoid unnecessary water use.

Water Landscapes Wisely



- Design water-smart landscapes that provide beautiful surroundings while reducing water needed for irrigation.
- Improve irrigation efficiency by hiring a professional certified through a WaterSense labeled program to audit an existing system or design and install a water-efficient system.
- Cut down on water loss from evaporation, wind, and runoff by replacing existing clock timers with WaterSense labeled irrigation controllers.

Keep Cooling Towers Cool



- Implement energy-efficiency measures to reduce the need for building and equipment cooling and heating, which will reduce amount of water required by these systems.
- Keep indoor temperatures at a comfortable setting while increasing the efficiency of cooling towers, evaporative coolers, and boilers by using alternative sources of water, such as air handler condensate and captured rainwater.
- Monitor cooling tower and boiler water chemistry to minimize the mineral buildup in the system and maximize the number of times water can be recycled through the system.

For more information or to download a copy of *WaterSense at Work*, visit the WaterSense website at www.epa.gov/watersense/commercial.

¹Dziegielewski, et al. 2000. *Commercial and Institutional End Uses of Water*. American Water Works Association Research Foundation.

²2009. *Water Use in Buildings SmartMarket Report*. McGraw-Hill Construction.