

## Water Conservation Checklist

### Retrofit Existing Toilets

There are several low-cost options for reducing water consumption in toilets. These options include displacement devices, toilet dams, early closure devices, and dual flush adapters. Using these methods, 0.5–2 gallons of water can be saved per flush. Some of these options can be user installed, while others require the assistance of a plumber.

### Replace Toilets

Replace the existing toilets with low-flow (<1.6 gpf) or high-efficiency toilets (<1.28 gpf). Look for the WaterSense classification.

### Retrofit Existing Urinals

- **Siphonic jet retrofits**—Fit flushometer valves with water-conserving parts, and use a timer to stop the flow of water when the building is not occupied.
- **Washout/washdown retrofits**—Add infrared or ultrasound sensor-activated controls that automatically flush after the urinal is used.
- **Blowout retrofits**—Install timers or sensors to operate the urinals only when the building is occupied.

### Replace Urinals

Replace the existing urinals with low-flow (<1.0 gpf), high-efficiency (<0.5 gpf), or waterless urinals. Look for the WaterSense classification.

### Retrofit Existing Showerheads

Incorporating flow restrictors is the most cost-effective option available. However, this can result in poor water pressure in some showerheads. The addition of a temporary cut-off valve can be used to stop the flow of water during soap application or shampooing. Water is reactivated at the previous temperature.

### Replace Existing Showerheads

Replace the existing showerheads with low-flow showerheads (<2.2 gpm). This can be achieved with atomizing, pulsating, or aerating showerheads.

### Retrofit Existing Faucets

Adding flow restrictors or aerators in the form of a disk or head at the faucet head can greatly reduce the flow rate through the faucet. These are good options for faucets primarily used for washing.

### Replace Existing Faucets

Replace or repair any faucets that leak. Even slow leaks add up to substantial water usage each year. Several new styles of faucets are available to limit the amount of water usage:

- **Metered valves**—deliver a preset amount of water, then shut off
- **Self-closing valves**—are spring loaded to stay on for a short time only
- **Infrared and ultrasonic sensor valves**—contain sensors in the faucet head that turn on the flow of water only when an individual is present.

### **Employ Water-Efficient Appliances**

Incorporate ENERGY STAR<sup>®</sup> water-consuming appliances whenever possible. Dishwashers and clothes washers are the appliances that use the most water in many cases. Use a dishwasher that reuses water for multiple stages; this not only saves water, but also detergent and rinse additives. Typically, front-loading clothes washers use less water than standard upright washers.

### **Eliminate Single-Pass Cooling Systems**

Single-pass cooling systems use water to cool equipment, and the water is circulated only once before being dumped. If possible, modify these systems to be closed loop. If that is not possible, make sure the cooling system is only running during machine operation. Instruct the machine operators on ways to reduce the machine run time, and look for an additional use for the waste water (i.e., landscape irrigation or cooling tower make-up water). When the opportunity arises, replace the water-cooled equipment with air-cooled equipment.

### **Reduce Water Consumption from Cooling Towers**

Reducing blowdown is the main way to save water with a cooling tower. This can be achieved by installing covers to block sunlight penetration, treating the water with ultraviolet light, doing an acid treatment to control scale build up, filtering the sediments from the water using a sidestream, or using ozonation to control scale, corrosion, and biological growth.

### **Minimize Irrigation Water Use**

Reducing the amount of water used by irrigation systems can save large quantities of water. This can be done by watering only in the early mornings, watering deeply once a week instead of watering lightly each day, adjusting sprinklers to water only landscape (not sidewalks and parking lots), and use a soil moisture sensor (tensiometer) to avoid over-watering.

### **Select Proper Landscaping**

In addition to minimizing water use, some foresight when designing the landscape can also help reduce water usage. When landscaping one should select climate-appropriate plants, reduce turf areas, monitor soil quality, incorporate mulching beds, and set up a proper irrigation system maintenance schedule to check for leaks and broken components.

### **Procure Irrigation Water from Alternate Water Sources**

Instead of using clean drinking-grade water for irrigation, consider getting water from alternative sources such as municipal water reclaim programs, recycled gray water, rainwater harvesting, single-pass cooling, condensate, or reverse osmosis (RO) reject water.

### **Install Efficient Irrigation Systems**

In addition to the previous methods outlined, there are several water-efficient irrigation systems available that can further reduce the quantity of water consumed. A few of these include the low-volume drip system, sub-surface drip system, and the weather-based irrigation system.