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# ENVIRONMENTAL Fact Sheet

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## Water Efficiency: Institutions

Schools, colleges, universities and other institutions that provide room and board can realize significant water and cost savings by implementing the water efficiency practices in this fact sheet. These practices address water use outdoors and in living areas, classrooms, cafeterias and laundries. A comprehensive audit should be performed to assess the facility's water system and identify locations where these practices can be employed to conserve water. The NHDES fact sheet "WD-DWGB-26-16 Water Efficiency: Business or Industry Water Use and Conservation Audit" provides information about performing water audits.

### General Water Efficiency Practices

- Locate and repair leaks. Metering at strategic points in the facility helps detect leaks and maintain minimum flow rates.
- Develop a maintenance program. Routinely inspect all plumbing and fixtures, equipment, water lines, irrigation systems, valves, and pumps for leaks, clogging, worn-out gaskets and faulty operation. Keep replacement and repair parts on hand.
- Educate residents about water efficiency practices.

### Domestic/Sanitary Water Efficiency Practices

- Install ultra low-flow toilets that use a maximum of 1.28 gal/flush (4.8 L/flush) or retrofit existing toilets with displacement bottles or dams. Install ultra low-flow urinals that use a maximum of 0.5 gal/flush (1.9 L/flush) or use waterless urinals.
- Install low flow faucets, faucet aerators, or laminar flow restrictors that limit flow to  $\leq 1.5$  gpm.
- Install low flow showerhead devices that limit flow to  $\leq 2.0$  gpm.
- Install flow restrictors on plumbing fixtures wherever possible.
- Install automatic faucet shut-off valves in public water use areas.
- Replace older model piped-in drinking water fountains with stand-alone water coolers/dispensers.
- Replace top-loading vertical-axis washing machines with front-loading horizontal-axis types.
- If a commercial type laundry exists onsite, consider using tunnel or similar washers that recycle the final rinse water into the next wash cycle. The NHDES fact sheet "WD-DWGB-26-10 Water Efficiency: Laundry Facilities" provides information about water efficiency practices related to laundry operations.

### **Kitchen/Cafeteria Water Efficiency Practices**

- Minimize or eliminate pre-wash spray systems and replace spray heads with low-flow models.
- Install automatic shut-off valves in all water-using kitchen equipment or shut off water when not in use.
- Remove garbage disposals. Replace them with strainers, or reuse wash and rinse water for disposal purposes. Composting food waste is the most practical disposal method for water conservation and nutrient recycling.
- Replace water-cooled ice machines with air-cooled models or retrofit to recirculating non-contact cooling.
- Use flake ice machines. These require less bleed-off than cube ice machines.
- Reuse non-contact cooling water for other purposes.
- Upgrade to water-saving machinery as old equipment wears out.
- Install on-demand point-of-use water heating systems to eliminate the need to purge lines for hot water. Insulate pipes to retain heat.
- Operate dishwashers, sanitizers, and sterilizers with full loads only and shut them off when not in use. Install sensors on conveyor systems that automatically shut off water when no dishes are present.
- Use high-temperature rinse dishwashers rather than low-temperature ones, as they require less water and wash more racks per hour.
- Consider using ultrasonic pre-rinse units or hand scrape dishes rather than rinsing with water.
- Pre-rinse utensils and dishes in a water basin.
- Rinse vegetables in a water basin.
- Reuse rinse water where appropriate for pre-rinsing, dish washing, garbage disposers, or scrapping troughs.
- Operate scrapping troughs only when washing dishware.
- Eliminate scrapping troughs or minimize the water flowing through them.
- Do not use running water to melt ice or frozen foods.
- Provide self-serve water dispensers and eliminate serving water with meals except upon request.

### **Outdoor Water Efficiency Practices**

The following water efficiency practices will help you save water in outdoor applications. For more detailed information about outdoor water use, check out the “Water Efficiency Practices” fact sheets on the [NHDES website](#).

- Cover outdoor swimming pools when not in use to prevent evaporative losses.
- Wash fleet vehicles less often.
- Sweep parking lots, driveways, walks, and steps rather than hosing them off.
- Watering frequency should be based on soil moisture, weekly precipitation, and plant/turf conditions. Typically, established landscape plants and turf grass require an inch of water per week, and this amount may be applied in one application.
- Employ rain sensors and soil moisture sensors on outdoor irrigation systems to ensure they do not turn on when not needed.
- Be sure sprinkler heads are producing drops rather than a mist. This helps reduce evaporative losses.
- Incorporate soil moisture and rain sensors into automatic sprinkler systems.
- Operate automatic sprinkler systems connected to public water systems only when the water demand is low, usually between 4:00 and 6:00 AM.
- Don't water the pavement. Adjust sprinklers so they water only the plants.

- Plant drought-resistant turf grass. The most drought-tolerant grasses are the fine-leaf fescues. The University of New Hampshire Cooperative Extension recommends a mix containing hard fescue, Chewings fescue, and perennial ryegrass.
- Soil moisture sensors are useful in determining how wet your soil is. You can check the moisture of the soil to determine watering needs. In some instances, you will find that you do not need to water, even if it has not rained recently. Water should be applied until the soil moisture meets the Cooperative Extension's recommendations for your soil type.
- Check soil moisture before watering, even if it hasn't rained. Then spot water, irrigating only those areas that are dry. Water by hand, if possible.
- Do not irrigate during windy conditions.
- Use hose nozzle shut-off devices
- Use drip or trickle irrigation wherever possible. These systems apply water near the root zone of the plant, ensuring a complete watering while eliminating excess water usage.
- Minimize your lawn area. Replace grass with moss, rocks, gravel, wood chips, or mulched flowerbeds.
- Plant species native to New Hampshire. Native plants are hardier and tend to need less water. Check out the Native Plant Trust's website for information about native plants at <http://www.nativeplanttrust.org/>.
- Use mulch wherever possible.

#### **For More Information**

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or [dwgbinfo@des.nh.gov](mailto:dwgbinfo@des.nh.gov) or visit our website at [www.des.nh.gov](http://www.des.nh.gov).

#### **References**

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Vickers, Amy; *Handbook of Water Use and Conservation*; WaterPlow Press; Amherst, MA; 2001; pp 267-277.

Note: This fact sheet is accurate as of July 2019. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete