



Using Water Efficiently: Ideas for Industry

Facility managers are finding that water efficiency programs are an effective way to reduce operating costs. Saving water also means saving costs for electric power, gas, chemicals, and wastewater disposal. Efficient water use also can have major environmental, public health, and economic benefits by helping to improve water quality, maintain aquatic ecosystems, and protect drinking water resources. Efficient use of water, through behavioral, operational, or equipment changes, if practiced broadly can help mitigate the effects of drought. This list of measures is not meant to be comprehensive, but rather a starting point. Other sources of information on water efficiency are available through EPA's web site (<http://www.epa.gov/OWM/genwave.htm>), and innumerable other sources, some of which may be accessed through the EPA web site, or through WaterWiser, The Water Efficiency Clearinghouse (<http://www.waterwiser.org>).

General Management Practices — make a corporate commitment to water efficiency:

- Designate a water efficiency coordinator.
- Develop a mission statement and a plan.
- Educate and involve employees in water efficiency efforts.
- Inform your chemical suppliers or service contractors (cooling tower, laundry, dishwasher, landscaping) that water efficiency is a priority.

Equipment Changes — high-efficiency plumbing fixtures, appliances and other equipment yield substantial savings on water, sewer and energy bills:

- Install high-efficiency toilets, or retrofit water-saving devices on existing ones.
- Install faucet aerators and showerheads.
- Install high-pressure, low-volume nozzles on spray washers.
- Install in-line strainers on all spray headers; inspect nozzles regularly for clogging.
- Replace high-volume hoses with high-pressure, low-volume cleaning systems.
- As equipment wears out, replace with water-saving models.
- Equip hoses with spring loaded shutoff nozzles.

Operating and Maintenance Procedures — a small investment that can yield big savings:

- Detect and repair all leaks.
- Identify discharges that may be re-used and implement re-use practices. Some discharges with potential for re-use are:
 - final rinses from tank cleaning, keg washers, fermenters
 - bottle and can soak and rinse water
 - cooler flush water, filter backwash
 - pasteurizer and sterilizer water
 - final rinses in wash cycles
 - boiler makeup
 - refrigeration equipment defrost
 - equipment cleaning
 - floor and gutter wash

- Use fogging nozzles to cool products.
- Adjust overflows from recirculation systems by controlling the rate at which make-up water is added: install float-controlled valve on the make-up line, close filling line during operation, provide surge tanks for each system to avoid overflow.
- Turn off all flows during shutdowns. Use solenoid valves to stop the flow of water when production stops.
- Adjust flow in sprays and other lines to meet minimum requirements.

Landscape Irrigation — can be significant during the growing season in some climates. (During drought conditions outdoor watering restrictions may be imposed, so some of the following tips will not apply.):

- Detect and repair all leaks in irrigation systems.
- Use properly treated wastewater for irrigation where available.
- Water the lawn or garden during the coolest part of the day (early morning is best). Do not water on windy days.
- Water trees and shrubs, which have deep root systems, longer and less frequently than shallow-rooted plants that require smaller amounts of water more often. Check with the local extension service for advice on watering needs in your area.
- Set sprinklers to water the lawn or garden only – not the street or sidewalk.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.
- Install moisture sensors on sprinkler systems.
- Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and retard weed growth.
- Remove thatch and aerate turf to encourage movement of water to the root zone.
- Raise your lawn mower cutting height – longer grass blades help shade each other, cut down on evaporation, and inhibit weed growth.
- Minimize or eliminate fertilizing, which promotes new growth needing additional watering.

Other Outdoor Uses:

- Sweep or blow paved areas instead of hosing off.
- Control hose flow with an automatic shut-off nozzle.
- Wash vehicles less often; use a commercial car wash that recycles water.
- Do not install or use ornamental water features unless they recycle the water. Use signs to indicate that water is recycled. Do not operate during droughts.

* These suggested measures are not intended to supercede more stringent federal, state, tribal, or local health, safety, or environmental regulations.