

Facility Water Use Checklist for Maintenance Staff

This check list has been developed for a variety of facilities. Please modify it by adding or removing water uses that make the checklist as relevant as possible to your facility. Descriptions of equipment and processes that utilize water, as well as water saving technologies can be found on the ADWR Conservation Website in the [Technologies Section](#).

- Locate and identify each water meter and record numbers on a meter inventory form.
- Develop a meter location map for your entire site. This will save time relocating them in the future, especially if new staff is hired.
- Determine the use(s) of each meter (e.g. building; landscaping, or both). To more accurately determine water use and related costs of individual units, equipment, systems or building areas, sub-meters can be installed. A sub-metering system typically includes a master meter, which is owned by the utility supplying the water, and a sub-meter, which is installed by the property owner or manager to meter water use of specific buildings or irrigation systems.
- Check for leaks in all interior and exterior pipes, connections, faucets, and in the parking garage and basement.

Domestic Plumbing

- Check tank toilets for leaks twice a year by placing dye tablets or food coloring in the toilet tank; wait a few minutes and see if the color appears in the bowl. If so, there is a leak. Dye tablets are inexpensive and available at your local hardware store, or, for larger quantities, online. Repair each leak that is found. Flappers are the cause of most toilet leaks, especially if the flapper is more than three years old.
- Flush valve toilets and urinals can also leak. Check fixtures twice a year. Periodically check for new products that convert existing urinals to a “waterless” flush, or consider replacing existing flush style urinals with “waterless” urinals. Similarly, check for products that can be used to convert regular-flow toilet tanks or urinals to lower-flow or no flush options. Contact an authorized sales representative for more information.
- Repair all leaks promptly; they can waste thousands of gallons of water a year.

Water Conditioning Water Softeners

- Test the quality of softened water daily to determine your required regeneration frequency and backwash based on pressure differential to save water.

Water Heating

- Check all pipes and fittings and repair leaks promptly.
- If in use, evaluate the hot water recirculating systems for leaks.

Cooling and Heating

Cooling Towers – Understanding Your System

- Determine your level of cooling tower efficiency. Prepare an inventory of each cooling tower you have, its cooling capacity, and the equipment or processes that it serves.
- Meter and record the amount of make-up water added to each tower and the amount of blow-down water discharged from each tower. If you know your makeup water and bleed-off water volumes, you will be able to calculate your concentration ratio by using the [Cooling Tower Consumption Log Sheet A](#) (for metered makeup or bleed off water), or the [Cooling Tower Consumption Log Sheet B](#) (if dissolved solids are measured via another means). If you properly meter and record your tower's water losses, you may be able to obtain a credit for evaporation from your local Wastewater Management Department. Credits are sometimes provided because the water does not return to the sewer.

Evaporative Coolers

- Turn off evaporative coolers when the building is unoccupied.
- Inspect the cooler float, pump, and motor at least once a year. Check for leaks, worn pads or malfunctioning equipment.
- Replace cooler pads regularly; twice each season for conventional coolers is recommended. Some cooler brands use pads that are several inches thick that can be used for several seasons. Follow manufacturer's recommendations on frequency of pad replacement.
- Add a quart of white distilled vinegar to the cooler water three times each season to help reduce mineral buildup. Keeping the pads cleaner will improve water circulation and cooling efficiency and may reduce water use.
- Pipe the bleed-off from evaporative coolers for non-potable uses such as washing vehicles and watering landscapes.
- Adjust bleed-off valves to discharge the minimum amount of water necessary. Any amount more than a few gallons per hour for a typical small cooler may be excessive.
- Be sure the coolers have pumps to re-circulate the water through them.
- When the evaporative cooler is no longer needed for the season, clean and protect it to make sure it operates properly the following year. Cover the cooler to prevent heat loss from the building.

Mist Cooling Systems

Make sure nozzles are directed properly so that the system only cools the area intended. In commercial situations, divide up mister nozzles into groups so they can be independently controlled.

Maintain the system properly following manufacturer's recommendations.

Boilers and Steam Generators

Check steam traps and lines for leaks and repair as soon as possible.

If the facility has cold water mixing valves for blow-down cooling, check them to be sure that the water does not flow continuously and consider replacing them with an expansion tank.

Discharge boiler blow-down via an expansion tank to allow it to condense and cool.

Reduce plumbing leaks due to repeated openings of water-temperature and pressure-relief valves (TPRV's).

Consider installing a condensate return system and condensate return meters.

Humidifiers

Identify leaks by turning off the humidifier and determining if any water is moving through the drain line.

Re-set timers based on seasonal needs on models that use a blow-down device to pump water out of the reservoir to remove mineral build up.


Check the controls and shutoff valves on the bleed-off system to avoid excessive bleed-off. Adjust bleed-off valves to discharge the minimum amount of water necessary.

Shut off humidifiers and their water supply when not needed.

Reuse once-through water for another purpose...and another...and another...

Kitchens

Dishwashing

- Check that the flow of the water through the dishwasher stops when the flow of items being washed stops.
- Check flow rate of any pre-rinse spray valves. If it is higher than 1.6 gallons per minute at a pressure of 60 psi, make a note to tell your manager, low-volume, high pressure nozzles are available and can be retrofitted.
-  Repair leaks in steam, hot water, and cold water lines.
- Evaluate kitchen practices to see if there are inefficient uses of water (e.g. thawing frozen foods with a running stream of water).

Garbage Disposers

- Experiment by gradually reducing the flow rate of water through the disposer, if no problems arise, continue to operate at the reduced flow rate.
- Check that the flow of water through the garbage disposer stops when the disposer motor stops. Many disposers have two water supply lines, one to the bowl and one to the grinding chamber. Be sure to check both.

Ice Machines

- Whenever the water flow in commercial ice machines becomes restricted due to the buildup of mineral deposits, the machine will take longer to run through its cycles. Routinely removing scales and de-liming commercial ice machines with acetic and phosphoric acid cleaners will keep it working hard and potentially save money in energy expenses. Some models offer automatic cleaning units that can be installed to make the job even easier.
- Change water filters every six months. Mineral deposits and slime growth on filters have a negative effect on ice production. The machine has to work harder, and it uses more energy to produce less ice.
- If the ice machine does not already have built-in antimicrobial features, consider purchasing antimicrobial sticks or pouches to put inside. Do not forget to replace these products every two to three months. The cleaner the ice machine, the more efficient it will be.
- Sanitize the machine every six months. If the machine does not have an automatic cleaning system, empty it and clean it with sanitizing agents every six months to remove mineral deposits.

Laundries

Large laundry facilities in resorts and hospitals can use a tremendous amount of water. Keep equipment operating in top condition, eliminate unnecessary flows, and implement efficient laundry practices.

- Do only full loads of laundry to reduce water use.
- Install faucets with flows not to exceed 2.2 gpm on janitorial sinks and set tubs (deep, wide sink or tub, usually of porcelain, slate, or soapstone).

General cleaning practices

- Keep paved surfaces clean with a broom rather than a hose or power washer; spot-clean stubborn areas with detergent and a brush. In most cases, this procedure meets health requirements. When you need to do heavy cleaning with water, sweep and spot-clean first and you will use less, or use a water broom.
- Install automatic shutoff and solenoid valves on all hoses and water-using equipment.