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INTRODUCTION

Water-Use Efficiency is a way to set your business apart. It is good business practice and improves profitability to conserve resources.

Commercial food service represents one of the larger water using sectors of non-residential customers. Water use in food service is also important because of the high volume of hot water used. As such, the energy required to heat that water can be significant. The reduction of water consumption in kitchen facilities is therefore of much interest to utility providers, evident in the fact that many incentives exist for both water and energy efficient equipment. Ultimately, using water responsibly in your commercial kitchen will help the bottom line.

💧 Get your patrons involved! Communicate your water concerns and achievements to your patrons. Install signs in the restrooms and display information on tables, encouraging water conservation. Create an opportunity for guests to make water conservation suggestions. Place suggestion boxes in prominent areas.



EMPLOYEES: YOUR WATER EFFICIENCY AMBASSADORS

Training and Engagement of Employees

Although equipment and measures contribute to lower costs, it is important to remember that equipment is used and measures are implemented by people.

With a high rate of turnover in some food establishments, creating a consistent training program will help existing employees reinforce behavior. Consider assigning a peer mentor to each new employee to help reinforce behavior for existing employees as well. But remember, as the owner/manager, you will serve as the best example of how best to use resources in your kitchen.

💧 If employees are to consider themselves a part of a resource-efficient or green organization, they need clear and factual information to help improve their understanding. Familiarize your team with your facility's water using systems. Make sure they know the location of major pieces of water-consuming equipment. Tell staff in advance about any new initiatives and retrofits. The better informed employees are, the more qualified they will be to act as effective water efficiency ambassadors to your guests.

In a fast-paced kitchen environment, finding extra time to spend with a new employee to teach water efficiency practices may seem nearly impossible. Training new employees as they join your organization is critical as well.

Train your employees to adopt new behaviors. It is essential to help your employees help you "green" your organization. Help your employees understand why you are making changes and encourage them to contribute ideas. Encourage your employees to participate in a water efficiency campaign by asking for their input, establishing clear and realizable goals, and agreeing on responsibilities. Acting without consultation will discourage their participation.

💧 Employees are your eyes and ears. In their front-line roles, they are not only ideally positioned to identify leaks and other signs of unnecessary waste, but also to provide advice on using water efficiently. Listening to staff input could help you save even more money.

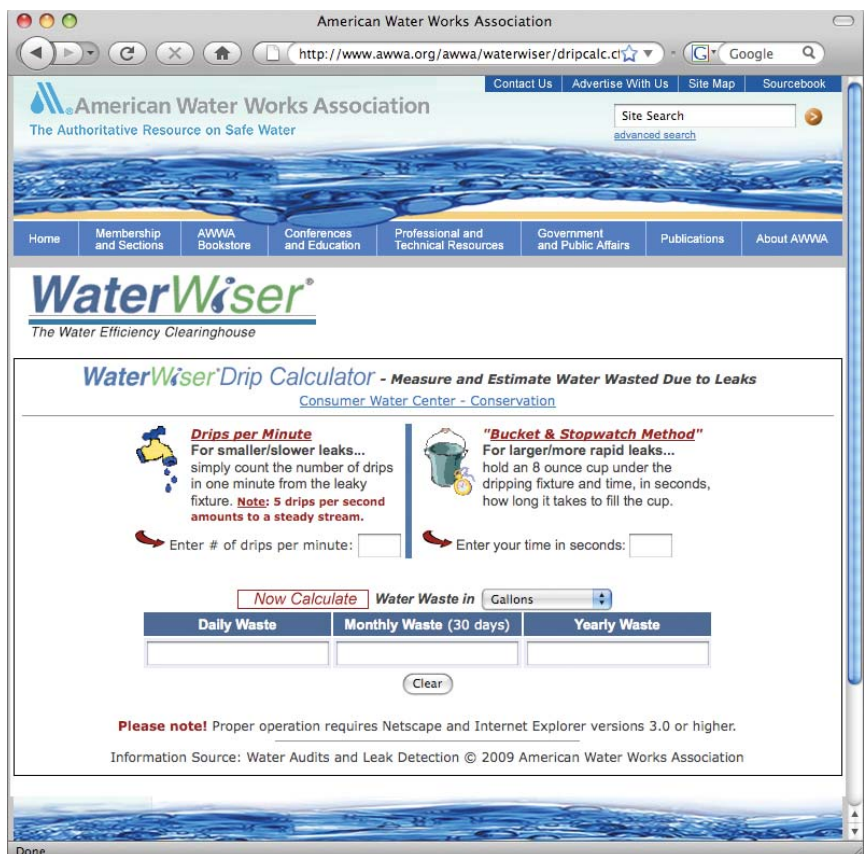


Remember to report results. Let employees know when their efforts have contributed to savings that benefit the company and the environment. Show them what's in it for them with incentive and recognition programs—paid directly out of the water savings you will realize. As the owner/manager make sure you set the example and take up the green practices yourself.

Make it a company policy to save! Educate employees about the importance and benefits of water conservation. Assign an employee to evaluate water conservation opportunities and effectiveness. Create your own volunteer green task force to further educate employees, monitor behaviors and reduce environmental impact in any way possible.

Allow time for your facility to transition. Allow time for repetition of the practices and help remind your employees by posting educational materials near water using equipment. Staff training and awareness can cut your costs in addition to installing water efficiency measures. Internal communication programs can employ a variety of tools including posters, flyers and newsletters - to create awareness of water conservation and energy efficiency and its relation to saving money and the environment.

- ◆ Fix leaks as soon as possible. This website hosted by the American Water Works Association will calculate the amount of water your dripping faucet is wasting. This valuable tool will help show you how many gallons per day, month or year you will save by fixing that leak. You could save hundreds to thousands of gallons a year. <http://www.awwa.org/awwa/waterwiser/dripcalc.cfm>



CHANGING BEHAVIOR



Again, it is important to remember that equipment needs to be used properly to optimize efficiencies.

Reduce the flow of dipper wells or troughs for ice cream or butter scoops to the minimum flow requirement.

Turn off food preparation faucets when they are not in use. Consider installing foot triggers to help employees stick to the conservation plan.

Use the refrigerator to thaw frozen food instead of thawing under running water. If water thawing is required, use a low-flow stream. Choose refrigerators that have adequate space for thawing food. Do not use running water to melt ice in the sink. Use melted water to water plants or save for dishwashing purposes, if possible.

Install aerators wherever possible. Sinks used for hand washing and other non-volume related activities can be easily retrofitted to use as little as 1.5 gallons per minute.

Install a hot water on-demand system at sinks if obtaining warm water requires employees to keep the water running for a long time. To avoid higher energy costs as well, choose a system that doesn't require that a recirculation pump run constantly.

Where applicable, serve water only upon request.

💧 Remember, any retrofitting and/or plumbing changes to facilities must be consistent with regulatory agencies. Check with the appropriate agencies before making changes.

EQUIPMENT

Steamers

Thanks to good heat transfer, steamers can rank among the more efficient kitchen appliances. Until recently, most steamers were boiler-based water hogs, consuming an average of 40 gallons of water per hour. Bringing this water to a boil also requires a lot of energy. This usage translates to thousands of dollars worth of water and energy costs per year for larger restaurants and food facilities. Fortunately, steamer technology has come a long way in recent years.

New Connectionless Steamers operate as a closed system—without a boiler or a drain—consuming far less water and energy than their “connected” counterparts. Manufacturers keep the production needs of their customers in mind, designing equipment that can produce just as much food as traditional boiler-based steamers but at a much lower cost to operate.

Field testing by the Food Service Technology Center shows just how great these savings can be. In a challenge between a three-pan connectionless steamer and a traditional boiler-based steamer, the connectionless steamer cut annual water expenditures by \$2,000 and annual energy costs by \$3,000. Look for Energy Star qualified connectionless steamers.



* The Food Service Technology Center (FSTC) is the industry leader in commercial kitchen energy efficiency and appliance performance testing. The FSTC, operated by Fisher-Nickel, Inc., has developed over 30 Standard Test Methods for evaluating commercial kitchen appliance performance. The Food Service Technology Center program is funded by California utility customers and administered by Pacific Gas and Electric Company under the auspices of the California Public Utility Commission. Find out more at www.fishnick.com.

- Both water and energy providers offer incentives to replace older boiler-based steamers with new efficiency rated connectionless models.



Tips to use your steamer at its highest efficiency:

Close the door!—Your profits are literally evaporating away if you operate your steamer with its door open.

Use only as many compartments as you need— With steamers, two or three or four are not better when it comes to saving water, energy and money.

Cut standby time—Eliminating an hour of standby time daily on a boiler-based steamer can reduce water and energy costs over the course of a year.

Fix leaks—When gaskets loosen or tear, don't waste any time before replacing them; steam leaks will reduce the efficiency of the unit.

Ice Machines

Ice machines use water in two ways: for freezing water to make ice and to cool the machine. A water-cooled machine producing 800 pounds of ice per day and running at 75% capacity will consume about 900 gallons per day. That amounts to 328,500 gallons a year. As for the ice making process itself, there is a wide range of water consumption depending on the manufacturer and the type of machine.

Ice cube makers use the most water, typically 20-25 gallons to produce 100 pounds of ice cubes; but some machines use considerably more, up to 90 gallons of water per 100 pounds of ice. Machines that make ice flakes, on the other hand, consume far less, about 15-20 gallons of water to produce 100 pounds of ice.



Tips to use your ice machines at their highest efficiency:

REPLACE WATER-COOLED UNITS WITH AIR-COOLED VERSIONS—Many water-cooled units employ single pass cooling and can be retrofitted for example, to cool the machine with an existing remote air-cooled condenser. However, the typical useful life of icemakers is five years, making replacement a near-term option. Both water and energy providers offer incentives to replace older water-cooled ice machines with new efficiency rated air-cooled machines.

Reuse spent cooling water—If retrofitting isn't possible, find other uses for the water after it has cooled the unit instead of letting it go down the drain.

Adjust your ice machine to dispense only as much ice as is being used—if there is a lot wasted, you are losing water, energy and money unnecessarily.

Use ice flake machines wherever possible.



Waterbrooms

Use brooms rather than water for sweeping outside parking lots or paved areas. When absolutely necessary to use water, use a Waterbroom or similar device to clean efficiently. Food waste, grease, cleaning fluids, mop water and trash from food facility operations often make their way into storm drain systems, and do not get treated before reaching the ocean. This contaminates waterways, making them unsafe for people and wildlife. Best management practices like dry sweeping or using a Waterbroom prevent pollution, protect public health and help you avoid fines or legal action.

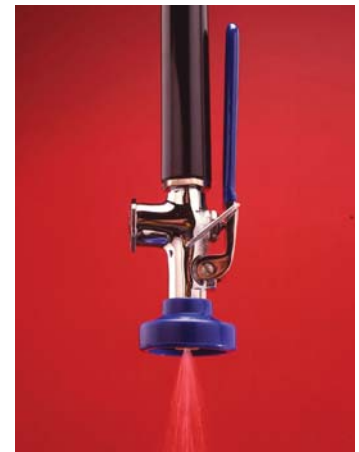
WASHING DISHES

Pre-Rinse Spray Valves

At pre-washing stations, which are used to dislodge large food particles, reduce water flow to the minimum required. Depending on the size and workload of your restaurant, a low-flow pre-rinse spray valve could save you more than \$1,000 in water and energy costs annually. Pre-rinse spray valves are engineered to work as well as or better than standard valves. In fact, any new valves installed at a facility are required to use no more than 1.6 gallons per minute. There are models on the market today that only use 1.28 gallons per minute.

Check pre-rinse fixtures frequently for leaks since they tend to receive a lot of rough handling.

Even presoaking utensils and dishes in a basin helps reduce the amount of water used to wash dishes.



Dish Washers

Don't waste the space!—You'll pay the same amount to run a half loaded dish rack as a fully loaded one. Make sure you only run fully loaded dish racks through the dish washer. Cutting wash cycles could save you hundreds of dollars annually!

If you are using a conveyor-type machine, make sure that water flows only when dishes are present—Some machines are designed to dispense water if the conveyor moves, whether it is carrying dishes or not. If this is a problem, an electronic “eye” sensor system can be installed, which will turn on water only when dishes are moving on the conveyor belt.

Design your system with efficiency in mind—If you're in the market for a new dish-washing system, it'll pay to look into a system that uses one gallon or less of water per rack washed. In turn you'll save the energy it takes to heat that water as well.

Check your dishwasher to ensure that it is not using more water than is specified by the manufacturer—Most commercial machines require about 2.8 to 8.0 gallons per minute to both clean and sanitize. Also, pay attention to your dishwasher's pressure gauge. If it's showing pressure above 25 psi, there's a good chance you are using much more water than necessary. Most dishwashers only require around 20 psi. Consider installing pressure regulators to limit water flow to the manufacturer's specification. Also, install low-flow, high pressure spray heads or a flow reduction valve in the water supply line.

Channel dishwasher waste water to the garbage disposer and food scrapping troughs for reuse—Also, you can recycle final rinse water to be used in the next dishwasher load or pre-wash load, or also for use in the garbage disposer.



Garbage Disposers

Consider replacing the scrapping trough system, which typically relies on a 3-5 gallon per minute flow of water to wash garbage to the disposer. Instead, install a conveyor system that uses no water. If this is not cost effective, use the scrapper system only when needed (or eliminate the system all together as it is not necessary to dispose of food waste in the sewer system).

Commercial disposers can use between 5-8 gallons per minute or even more if connected to a scrapping trough. Since food waste does not have to be discharged to the sewer system, many facilities have removed these high-maintenance fixtures. Instead, **use a garbage strainer which requires only about 2 gallons per minute.** Food waste accumulates in a strainer basket as a recirculating stream of water passes through, washing out the soluble material and small particles to the sewer. The remaining waste is dumped in the garbage.

If it is not possible to install a garbage strainer, consider the following upgrades.

Make sure the flow of water to the disposer is controlled by a solenoid valve, which automatically closes when the disposer motor turns off. Check that the valve is working properly. Keep in mind that many disposers have two water supply lines, one to the bowl and one to the grinding chamber.

If the unit is set to operate for a preset duration of time, reduce that run time to the necessary minimum.

Determine the minimum acceptable flow rate and adjust the disposer accordingly. Install flow regulators to avoid excess flow due to high water pressure.

HELPFUL LINKS FOR ON-GOING SAVINGS



www.westbasin.org
(310) 217-2411



www.sbesc.com
(310) 371-7222



www.bewaterwise.com



www.wrd.org

💧 Reducing water consumption can not only decrease your water bill, it can decrease your electric, gas and sewage bills as well.

- Reducing your water usage reduces your sewer bill. Utility companies use the water meter reading to calculate your monthly sewer bill, since it is assumed that most of the water you use eventually goes down the drain. So a lower water bill equates to a lower sewage bill.
- Reducing water usage reduces your water heating costs. Whether your water heater runs on gas or electricity, you can save significant amounts of money on either bill by decreasing overall consumption.
- Reducing water usage can reduce your electricity bill. Certain energy efficient product categories like ice machines, steamers and dishwashers will actually save you money on two fronts. They use less of both water and electricity than their standard counterparts, so when you buy an ENERGY STAR® qualifying dishwasher, you are reducing your water and electricity bills.