WATER CONSERVATION

Austin Water

RESTAURANTS AND COMMERCIAL KITCHENS

Water Conservation

Austin WATER

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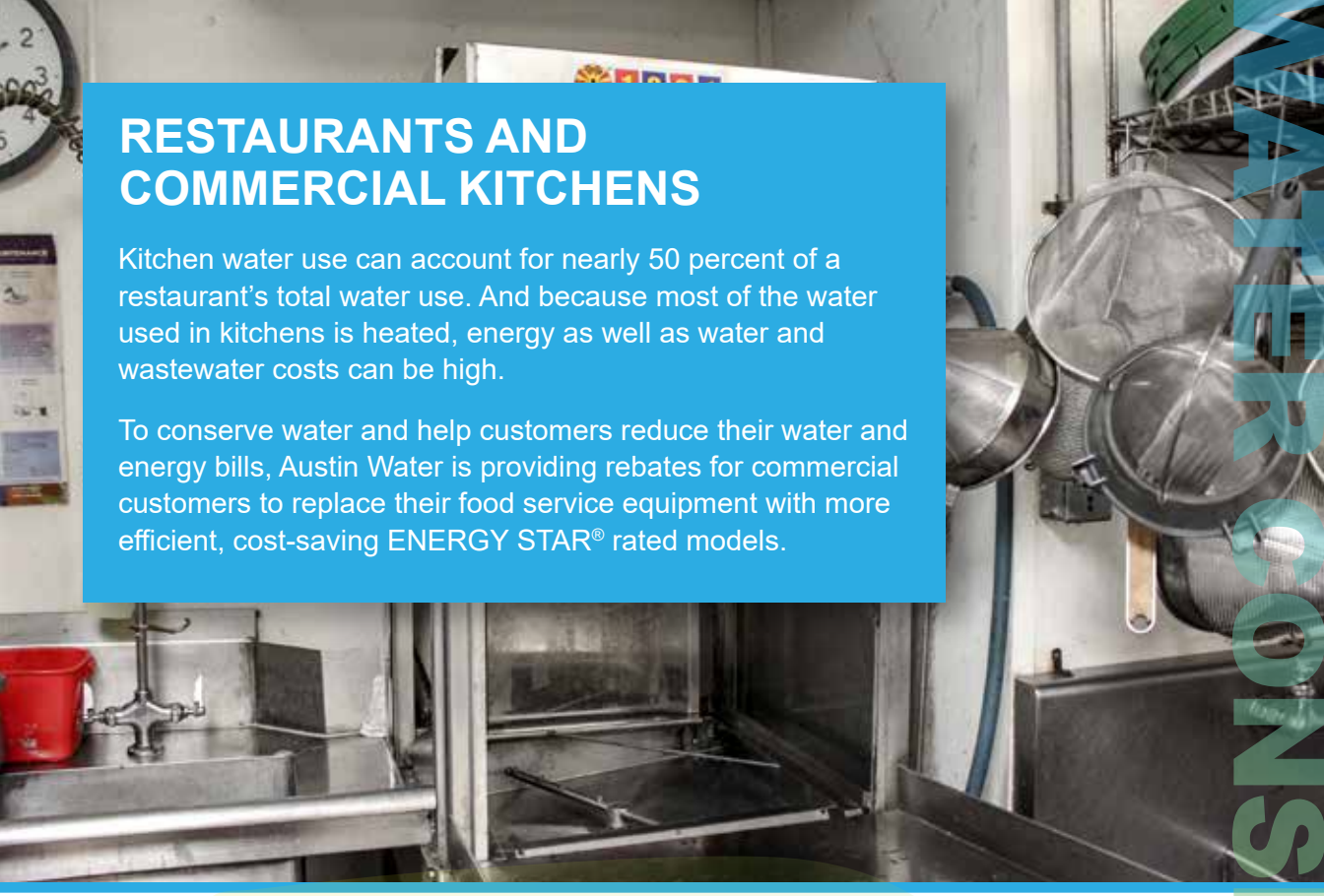

RESTAURANTS AND COMMERCIAL KITCHENS

Kitchen water use can account for nearly 50 percent of a restaurant's total water use. And because most of the water used in kitchens is heated, energy as well as water and wastewater costs can be high.

To conserve water and help customers reduce their water and energy bills, Austin Water is providing rebates for commercial customers to replace their food service equipment with more efficient, cost-saving ENERGY STAR® rated models.

WATER CONSERVATION

VALVES AND FAUCETS

Pre-Rinse Spray Valves

Replacing a 1.28 gpm pre-rinse spray valve with a 1.15 gallon per minute valve will drop water consumption from 29,901 gallons/year to 24,426 gallons/year, or an **annual savings of about 5,475 gallons, or 15 GPD.**

Kitchen Sink Faucet with Foot Pedal Controls

A foot pedal operated faucet on a commercial kitchen sink can **save up to 370,000 gallons of water per year, or 1,013.7 GPD.**

Dipper Wells

Installing an in-line flow restricter will **reduce the flow rate from 0.5 or 1.0 gpm to 0.3 gpm.**

DISHWASHERS

Undercounter Dishwashers

Undercounter types are commonly found in bars and cafes. They are the closest to residential dishwashers in design. Water use reduction from a standard High Temp model using 1.09 gallons per rack (GPR) to an ENERGY STAR® rated model using 0.86 GPR saves 21% on water consumption. **This is an annual savings of 6,000 gallons.**

Conveyor Type Dishwashers

Conveyor type machine pulls the rack of dishes through the washer and pushes the clean rack out the other side. Larger restaurants serving between 150 and 300 people a day commonly use this type dishwasher. Models come in single or multiple tank versions.

Going from a typical High Temp single tank Conveyor type machine using 0.87 GPR to an ENERGY STAR® rated machine using 0.70 GPR results in a 20% reduction in water use, or an annual savings of 25,000 gallons. Switching from a typical Low Temp single tank Conveyor type machine using 1.31 GPR and consuming up to 1,000 gallons per day (GPD) to an ENERGY STAR® rated machine using 0.79 GPR reduces water use by 40%, saving approximately 208 GPD or 76,000 gallons annually.

Water use reduction from a standard multi-tank High Temp model using 0.97 GPR to 0.54 GPR of an ENERGY STAR® rated machine reduces water consumption by 44% from 212,430 to 118,260 gal/year, for an **annual savings 94,700 gallons.**

Door or Hood Type Dishwashers

Door or Hood type dishwashers are typically found in restaurants serving fewer than 150 customers a day. Racks holding dishes are either hand loaded into the machine or loaded with an automatic system.

An ENERGY STAR® rated High Temp machine using 0.89 GPR rather than 1.29 GPR of a conventional machine reduces water consumption by 31%, resulting in an **annual savings of about 41,000 gallons.**

Flight Type Dishwashers

The flight type machine is designed for facilities serving hundreds or even thousands of people per day. They are typically found in large hospitals and hotels with banquet facilities. These machines have a continuously moving belt with pegs where the dishes are placed. Average water savings from an ENERGY STAR® rated machine over a conventional model is about 25%, ranging from annual savings of 65,000 gallons to 500,000 gallons for a medium sized unit to 120,000 to 1,000,000 gallons for a large sized unit.

COOKING EQUIPMENT

Boilerless Combination Ovens

Combination ovens (combis) offer multiple cooking modes, including dry heat, moist heat, and steam. Boilerless combis generate humidity by spraying a fine mist of water on the heat exchangers at regular intervals. The mist is quickly flashed into steam and circulated throughout the cooking chamber. This design requires less water to maintain humidity in the cooking environment and subsequently less cooling water. Water usage can be further controlled by using the combi oven in convection (dry heat) mode when practical. Even if combi (moist heat) mode is required for particular menu items, the oven can be set to convection mode between cooking events or during idle periods to reduce unnecessary water consumption.

A typical 10-pan combination oven consumes 30 to 40 gallons/hour or 175,000 gallons/year. An ENERGY STAR® rated 10-pan boilerless combination oven consumes 10 – 15 gallons/hour, saving 301 GPD or 110,000 gallons/year.

Waterless Wok

Replacing a conventional wok using 1,321 gallons/day with a waterless wok using 132 gallons/day saves approximately 1,189 gallons/day. This is in addition to operating cost savings, less maintenance, improved reliability and longer equipment life while costing about the same as a conventional wok.

"Connectionless" Steam Cookers

"Connectionless" steamers, generate steam in a reservoir at the bottom of the cooking compartment and condensed steam returns to the reservoir, instead of draining outside the compartment. Water is added and drained manually at the beginning and end of the day. Since there is no continuous flow out the drain, these steamers significantly reduce water consumption.

A typical 6-pan boiler-style, steamer consumes 30 to 40 gallons/hour or 175,000 gallons/year. A 6-pan ENERGY STAR® rated "connectionless" steamer consumes 2 to 3 gallons/hour or 13,140 gallons annually while operating at peak capacity. A 93% reduction in water use and **saving 478 GPD or 162,000 gallons/year.**

TIPS

Additional measures restaurants may use to save water include:

- Use the customer's glass for beverage refills.
- Do not use running water to:
  - melt ice
  - thaw foods – instead, thaw them overnight in the refrigerator
  - wash vegetables – instead, wash them in a container
- Find and fix any leaks. A leaky faucet that only "dribbles" can waste thousands of gallons of water a month.
- Use a steam cooker in a timed mode instead of continuous (manual) mode to save thousands of gallons of water a year.
- Back off the setting on your pasta cooker to just maintain a simmer instead of a rolling boil to reduce the amount of water lost to vaporization and have minimal effect on product cook times.
- Wok ranges with sufficient insulation do not require the additional cooling provided by continuous water flow, thereby eliminating water consumption.
- Recycle water from steam tables to wash down cooking areas.
- Turn off water to the dipper well when service periods are slow and the dipper well is not in use. When in use, keep the dipper well running at its minimum flow rate.
- Soak pots and pans and pre-soak utensils in a basin first rather than rinsing under running water.
- Minimize use of pre-rinse settings on dish washers; use low-flow options and turn off hot water pre-rinse to save water AND energy costs.
- Wash only full racks in the dishwasher.
- Use leftover ice from bar wells and vegetable rinse water on plants to water them overnight, avoiding daytime evaporation.
- Install 1.28 gallons per flush (GPF) low-flow tank or 1.0 GPF flush valve toilets and 0.5 GPF urinals to save up to 14,000 gallons each per year and pay for themselves within the first few months of installation. These are required by city code for new and replacement toilets.
- Simple and inexpensive to install, low-flow faucet aerators can reduce your water consumption and energy cost of heating the water by as much as 50%. The more efficient bathroom faucet aerators use 0.5 gallons per minute and are required for public bathrooms. Efficient small kitchen sink faucet aerators use 1.5 gallons per minute. The use of foot pedals at the hand wash stations will also save water.

WATER CONSERVATION

ELIGIBLE EQUIPMENT AND REBATE AMOUNTS

Qualifying replacement equipment criteria based on version 2.0 ENERGY STAR® program requirements effective Feb 1, 2013

ENERGY STAR® rated Boilerless Steam Cooker
ENERGY STAR® rated Boilerless Combination Oven
ENERGY STAR® rated Dishwasher, Undercounter, Low Temp using ≤ 1.19 GPR*
ENERGY STAR® rated Dishwasher, Undercounter, High Temp using ≤ 0.86 GPR
ENERGY STAR® rated Stationary Door or Hood type Dishwasher (also known as stationary rack) Low Temp using ≤ 1.18 GPR
ENERGY STAR® rated Stationary Door or Hood type Dishwasher High Temp using ≤ 0.89 GPR
ENERGY STAR® rated Dishwasher, Single Tank Conveyor type Low Temp using ≤ 0.79 GPR
ENERGY STAR® rated Dishwasher, Single Tank Conveyor type High Temp using ≤ 0.70 GPR
ENERGY STAR® rated Multi-Task Conveyor type Dishwasher Low Temp using 0.54 GPR
ENERGY STAR® rated Multi-Task Conveyor type Dishwasher High Temp using 0.54 GPR
ENERGY STAR® rated Single Tank Flight-type Low or High Temp GPH** ≤ 2.975x + 55.00
ENERGY STAR® rated Single Tank Flight-type Low or High Temp GPH** ≤ 4.96x + 17.00
WaterSense® labeled Pre-Rinse Spray Valve using 1.15 gpm or less
Kitchen sink faucet spring-loaded foot pedal control
Waterless Wok Stove

Annual estimated water savings (gallons) based on EPA's ENERGY STAR® Commercial Kitchen Equipment Savings Calculator[1]	Austin Water Rebate
162,000	**$2,000**
110,000	**$1,200**
15,000	**$200**
6,000	**$200**
94,024	**$1,000**
41,000	**$600**
76,000	**$800**
25,000	**$500**
110,000	**$1,200**
94,700	**$1,000**
Up to 500,000	**$5,000**
Up to 500,000	**$5,000**
5,475	**$40**
6,000	**$100**
over 482,000	**$2,500**

[1]EPA's ENERGY STAR® Commercial Kitchen Equipment Savings Calculator can be found at: www.energystar.gov/certified-products/detail/commercial_kitchen_package

For other information on how you can save water, energy and money with more efficient food service equipment, see EPA's WaterSense® or the Food Service Technology Center's web sites at: www.epa.gov/watersense/commercial/docs/watersense_at_work/

www.fishnick.com/savewater/tools/watercalculator/

Equipment eligible for a rebate from Austin Water may also qualify for an energy rebate from: **Austin Energy** www.austinenergy.com or **Texas Gas Service** www.texasgasservice.com/SaveEnergyAndMoney/ConservationPrograms/AustinConservation/CommercialPrograms.aspx

*GPR = gallons per rack;
**GPH = gallons per hour; x = maximum conveyor speed (feet/min as verified through NSF 3 certification) x conveyor belt width (feet).

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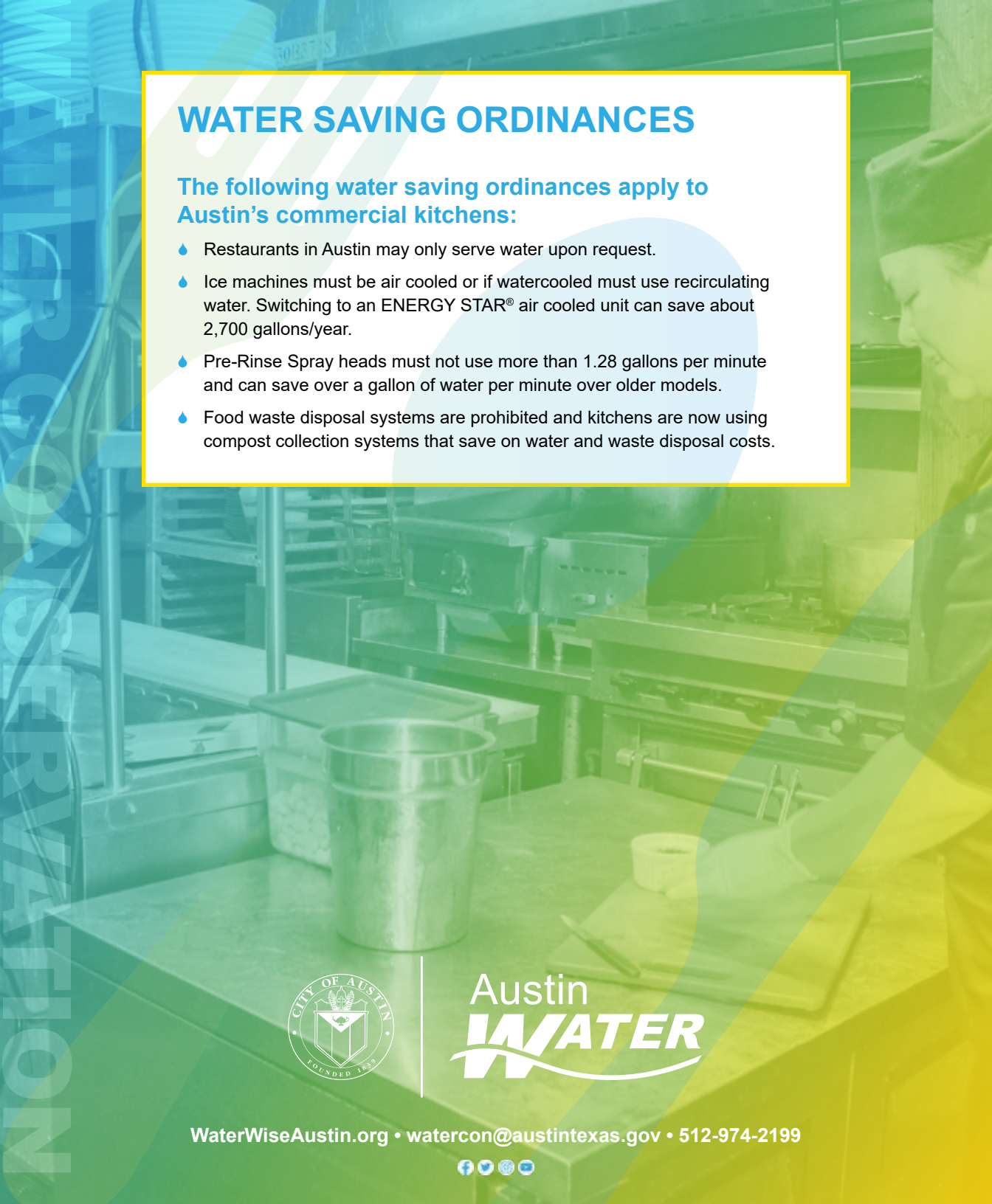

WATER SAVING ORDINANCES

The following water saving ordinances apply to Austin's commercial kitchens:

- Restaurants in Austin may only serve water upon request.
- Ice machines must be air cooled or if watercooled must use recirculating water. Switching to an ENERGY STAR® air cooled unit can save about 2,700 gallons/year.
- Pre-Rinse Spray heads must not use more than 1.28 gallons per minute and can save over a gallon of water per minute over older models.
- Food waste disposal systems are prohibited and kitchens are now using compost collection systems that save on water and waste disposal costs.

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