



The Hospitality Green Water Challenge



Why Should Restaurants Conserve Water?

We take water for granted. Water shortages presently exist in California, Texas and Oklahoma, with the potential for New York in the near future. Due to the 24/7 nature of the restaurant business and commonly practiced inefficient water usage systems, major waste occurs every day. Therefore restaurants have a great opportunity to:

- Positively impact our present and future water supplies
- Impact their own bottom line profits with water conservation strategies



Customer Expectations

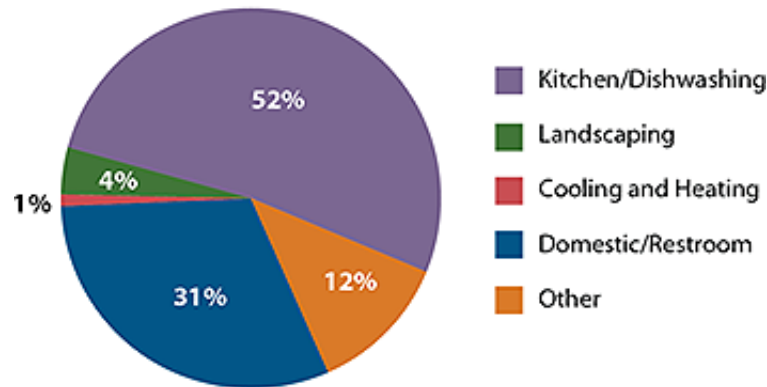
More than ever, customers want/expect the businesses they spend money with to be socially responsible to their local community and environment. This includes managing water efficiently.



Typical Restaurant Water Use

Approximately 15 percent of the total water use in commercial and institutional facilities in the U.S. takes place in hospitality and food service establishments. The largest uses of water in restaurants are associated with equipment and processes that take place in the kitchen. Restrooms follow kitchens as the second highest water use in restaurants.

End Uses of Water in Restaurants



Restaurant Water Conservation Measures

Free Measures

- Education and Behavioral Changes

Low Cost Measures

- Low-Flow Retrofits

Investment Opportunities

- Air Cooled Over Water Cooled
- Closed Loop Cooling Systems



Free Water Conservation Measures

Check for leaks!

- Most important and easiest way to save money...Thousands of dollars are lost down the drain due to unchecked water leaks

Wash only full dish racks.

- \$4,000 per year in potential savings.

Be efficient in all water use operations

- Don't let water run unnecessarily



Leaks and Their Costs

Based on Water and Sewer Rates:

Cost per 100 cubic feet (748 gallons):

Water and Sewer: \$9.58

Cost per gallon:

Water and Sewer: \$.012

	In 24 Hours A Leak Will Waste (in Gallons)	Cost Per Day	Cost Per Year
FAUCETS			
Slow Drip	36	\$0.42	\$154.24
Steady Drip	180	\$2.11	\$771.18
One Quarter Open	684	\$8.03	\$2,930.50
One Half Open	1620	\$19.02	\$6,940.66
Full Open	3600	\$42.26	\$15,423.69
Toilets			
Seeping	30	\$0.35	\$128.53
Leaking	250	\$2.93	\$1,071.09
Constantly Running	6000	\$70.43	\$25,706.15

Low Cost Water Conservation Measures

Low-Flow Retrofits

Pre-Rinse Spray Valves – 1.42 GPM
(Gallons per Minute)...Can save up
to \$1200/year



0.5 GPM Faucet Aerators...a \$5 part
that can save hundreds of dollars



1.1 GPF (Gallons per Flush) Toilets

0.125 GPF Urinals
Low-flow valves

Water Investment Opportunities in Equipment That Pays Off

Dishwashing Machines

- Energy Efficient

Closed Loop Refrigeration

- Compared to Once-Through

Ice Machines

- Energy Efficient Air Cooled instead of Water Cooled



Energy Efficient Air Cooled vs. Water Cooled Ice Machine

Performance	Standard	Standard	Energy (& Water) Efficient
	Water-Cooled Model	Air-Cooled Model	Air-Cooled Model
Energy Consumption (kWh/100# ice)	6	7.6	5.6
Water Consumption (gal/100)	156	28	20
Annual Energy Use (kWh) ^a	9855	12483	9198
Annual Water Use (gal) ^a	256230	45990	32850
Annual Energy Cost ^b	\$986	\$1,248	\$920
Annual Water & Sewer Cost ^c	\$1,713	\$307	\$220
Total Annual Utility Cost	\$2,699	\$1,555	\$1,140

^a Annual energy use is based on a 75% duty cycle, 365 days per year.

^b Energy costs are based on \$0.10/kWh.

^c Water and sewer costs are based on \$2.00/ccf and \$3.00/ccf, respectively.

Equipment Investment Case Study

- Hilltop Steak House in Saugus, Mass
 - Updated to closed-loop cooling system
 - Saves 5.3 million gallons of water per year
- Initial cost of \$27,000, with yearly savings of \$26,500
- ROI of one year and a savings of \$26,500 and 5.3 million gallons every year after



Aqua Grill, NYC Case Study

An Investment of \$4,248 saved \$6,213 and 547,000 gallons of water within 1 year

Aqua Grill								
Fixture Name	Existing		Proposed Alternative	Water Savings in gallons/year	By switching you save \$/year	Total savings \$/year	Cost of Installation	Pay Back in years
	Unit	Consumption						
Faucets	gpm	2.2	0.5	74,460	\$845	\$4,883	\$3,150	0.65
	gpm	4	2	43,800	\$497			
	gpm	4	1.5	54,750	\$621			
	gpm	6	2	175,200	\$1,988			
	gpm	4.5	2	82,125	\$932			
Pre-rinse Spray valve	gpm	2	0.66	73,365	\$832	\$832	\$88	0.11
Toilets	gpf	1.6	1.1	7,300	\$83	\$83	\$910	10.99
Leaks	Gal./Day	100	0	36,500	\$414	\$414	\$100	0.24
Total				547,500	\$6,213	\$6,213	\$4,248	0.68

Sample Water Assessment Survey



Free Water Conservation Survey For: Bond Street Chocolate

Restaurant Address: 63 East 4th Street
City, State, Zip: New York, NY 10003
Contact Name: Lynda Stern
Contact Phone/Email: (212) 677-5103

Thank you for your interest greening your restaurant operations! Below is a customized summary of your water conservation report. Below you will find a detailed breakdown of how these savings can be achieved.

For questions, please contact Steve Hruby. Cell: 440.308.5202 or Email: shruby2@gmail.com

Statistical Overview		
Savings	Cost	Pay Back
\$436	\$88	0.19

Fixture Location	Existing Fixture	Proposed Fixture	Water Savings in Gallons/Year*	Total Savings in \$/Year**		Cost of Total Installation***	Payback in Years (Total Installation)
	GPM	GPM		Water	Energy		
Faucets							
Dish Wash	2.5	1.5	10,950	112	6	0	0.00
Hand Wash (Kitchen)	1.75	0.5	13,688	140	8	0	0.00
Hand Wash (Restroom)	1.75	0.5	6,844	70	4	0	0.00
Pre-Rinse Spray Valve							
Kitchen Spray Valve	1.5	0.65	9,308	95	11	88	0.83
Toilets							
Restroom	2.5	1.5	1,825	19	0	0	0.00
			42,615	436	29	88	0.19

*Water savings estimates based on faucets and pre-rinse spray valve flowing for 30 minutes per day.

** Money savings estimates based on \$2.94 per 100 Cubic Feet of water saved, sewer cost of \$4.69 per 100 Cubic Feet of water saved, and \$0.50 per gallon for hot water saved.

*** Installation cost figures are based on American Standard average prices per new fixture and an additional 10% for installation. Aerators are based on market price and self installation.

Disclaimer: The contents of this report are for guidance and information only. The Green Hospitality Initiative does not make any guarantee of the accuracy of this report. All figures are based on estimations of water usage which changes from month to month. Furthermore, the Green Hospitality Initiative does not assume any liability of damages that may result from the use of this information. All mentions of individual companies by the Green Hospitality Initiative do not constitute an endorsement.

Rebates and Incentives

NYSERDA Commercial and Industrial Programs

Energy efficiency rebates and incentive services for existing buildings, new construction, and industrial facilities:

- Refrigerators: \$75-\$300
- Ice Makers: \$75-\$500

See

<http://www.nyserda.org/commercialkitchens/default.asp> for further information

3 Keys to Developing a Water Efficient Restaurant Operation

1. Commitment of a Key Decision Maker to Adopt Water Efficient Strategies



2. A Consistent and Effective Training and Monitoring Program



3. A Designated Individual in the Restaurant Willing to Take Responsibility for the Ongoing Water Efficiency Program Implementation



Restaurants Conserving Water

- The Right Thing To Do for the Community
- The Profitable Thing To Do for Yourself
- The Smart Thing To Do for the Future





The Green Hospitality Initiative is a free support service of the New York State Restaurant Association Educational Foundation for restaurant operators looking to create a more sustainable restaurant operation. Our goal is to also help contribute to the restaurant's positive bottom line by providing access to training and systems that maximize the impact of green hospitality strategies.

For further information please go to the GHI website at http://www.nysra.org/?page=EF_EPA_Home
or contact: Alan Someck: asomeck@gmail.com

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References

- **Slide # 4 Water Sense** <http://www.epa.gov/watersense/commercial/types.html#tabs-restaurants>
- **Slide # 7** NYC Department of Environmental Protection
- **Slide # 10 Droughts**<http://www.fishnick.com/savewater/appliances/icemachines>