

# The Touch-Free Restroom:

Increased Efficiency  
at a Reduced Cost



A FREE Webcast  
May 20, 2008 1:00 p.m. (EST)

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## Today's Moderator



**Greg Zimmerman**

Executive Editor of *Building Operating Management* magazine.

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## Today's Presenter



### **Bill Hoffman, President H.W. Hoffman and Associates, LLC**

Bill Hoffman is a principal with H.W. Hoffman and Associates, LLC, and water resource planning and conservation services firm located in Austin, Texas. He is the former Program Coordinator for Industrial, Commercial and Institutional (ICI) Water Conservation Programs for the City of Austin. He has been instrumental in developing and implementing technical assistance programs for water conservation in Texas and has helped conduct a number of workshops to train municipal water conservation personnel how to set up and administer their own conservation, reuse and drought management programs. He has lectured on the subject of ICI water conservation throughout the United States and in Mexico and Canada.

Bill has over 35 years of water and related experience both in the United States and over seas. He has a BS degree in Chemical Engineering and an MS degree in Environmental Health Engineering, both from the University of Texas at Austin. He is a registered professional engineer in Texas.

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Tork is an SCA brand

**TORK**

at SCA Tissue **green**  
**is more than**  
**just a color**





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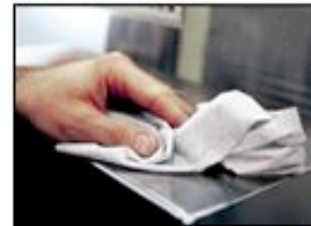
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# Tork Solutions for Your Building

From your washroom to your maintenance room, to your breakroom, SCA's got you covered with a wide range of innovative products.

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## Topics to be Discussed

1. What is out there?
2. Cost and possible savings.
3. Being Green?
4. The human factor.
5. Alternate water sources.
6. Possible sources of help.

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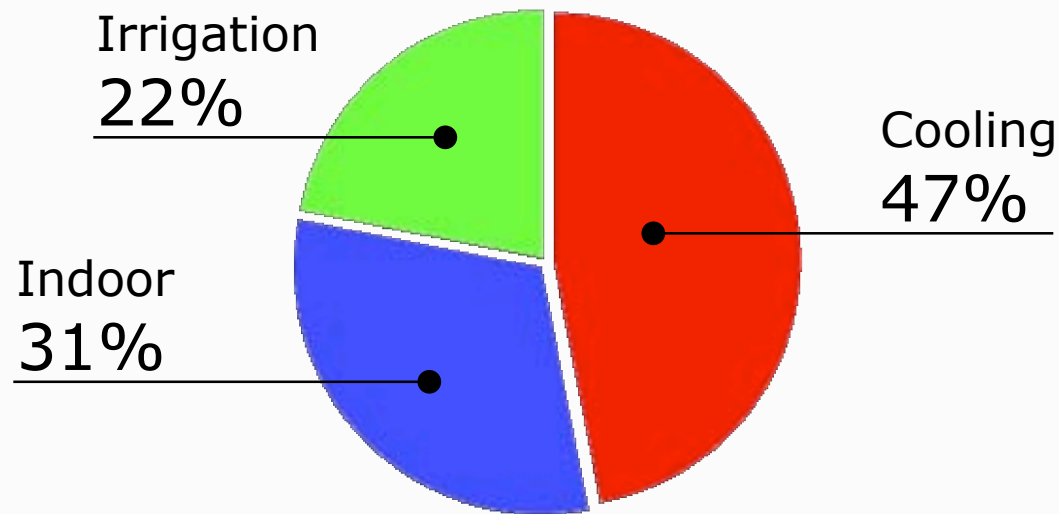
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## It's Not All Plumbing Use

For a 10 story office building  
in Austin, Texas



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# 1. What is out there?

- Toilets
- Faucets
- Showers
- Urinals
- Mop Sinks
- Bidets
- Trap Primers

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# Talk About Public Toilets!

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# Toilets of all Types Help Save Water



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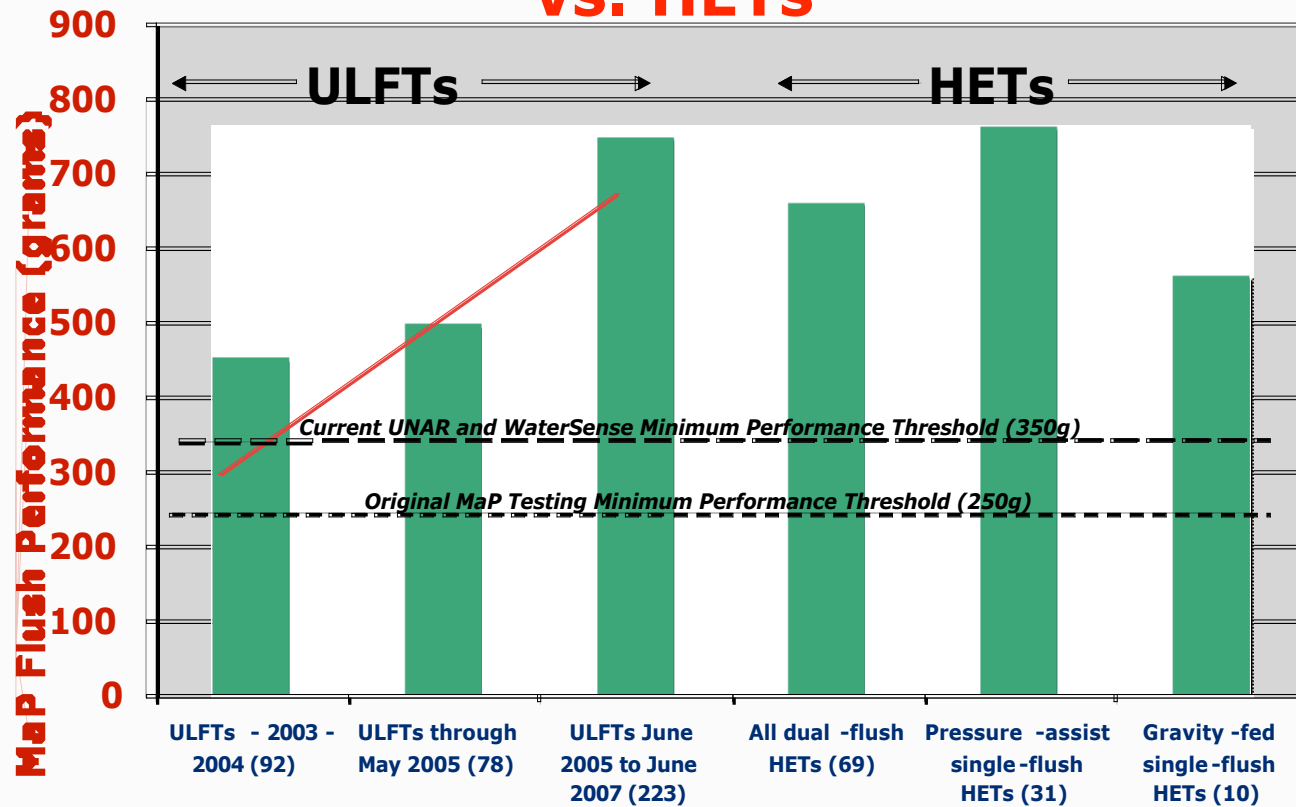
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## MaP Flush Performance - ULFTs vs. HETs



By Koeller and Veritec, June 1, 2007

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# Hands Free Faucets

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delivering reliability



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# Touch Free Towel Dispensers & Hand Dryers

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# Foot and Knee Valves

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**Knee Valve**



**Foot Valve**

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## Commercial Faucets

- Commercial lavatories & restrooms  
-0.5 gpm
- Self closing faucets  
-no more than 0.25 gallons per use
- Domestic faucets such as hotel rooms  
-2.2 gpm

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# Aerators/Flow Controls

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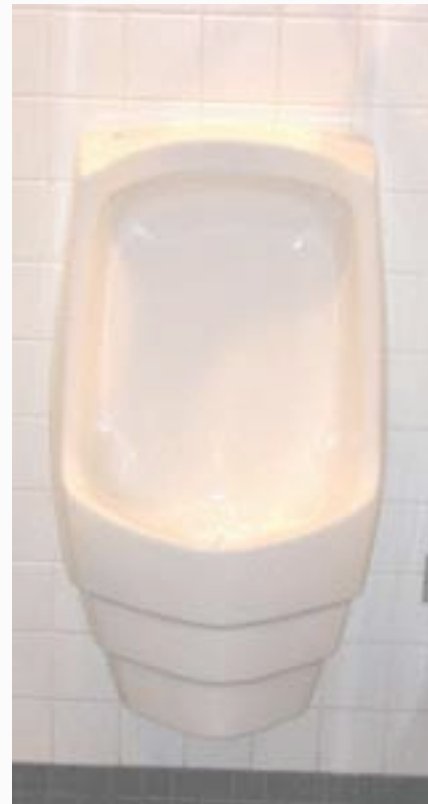
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Wash Down



One Pint



Waterless

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## Showers Use Water & Energy



The water pressure in the buildings averages 70 psi. The flow rate on the showers is in excess of 10 gallons per minute.

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# Floor Drain Trap Primers

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## Floor Drain Trap Primers

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Primer Type	Actuations per Day	Water Use
Continuous	Continuous	Extremely High!
Flush-activated	Depends on Flush Valve Use	Very Low
Pressure-Sensitive	Depends on Fixture Use	Very Low
Electronic	1	Very, Very Low
P-trap Primer	Depends on Fixture Use	0

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## 2. Costs and Possible Savings

- Water
- Wastewater
- Energy
- Maintenance
- Appearance

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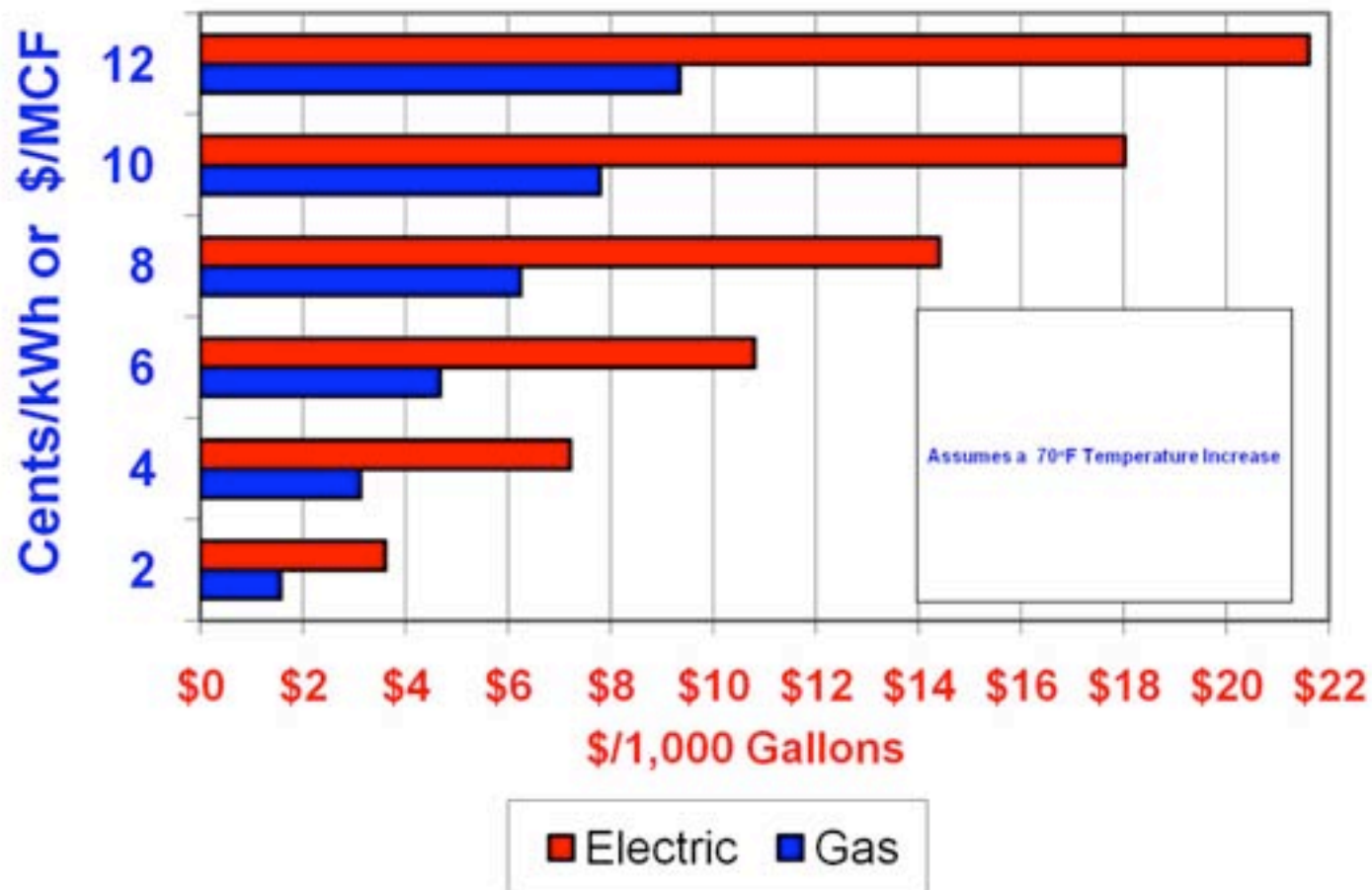
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## Energy Costs for Heating Water



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## Water Use by Fixture Type

Fixture Type	Current Lowest	Energy Policy Act	1980's	Before 1980's
Toilet (Gal./Flush)	1.28	1.6	3.5	5
Urinal (Gal./Flush)	0	1.0	1.5	3.5
Faucets (Gal./Min.)	0.5	2.2	3.5	3.5

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## Typical Plumbing Fixture Uses Per Person Per Day

	Toilet	Urinal	Faucet
Males	1.2	2.5	4
Females	3.5	0	4
50%/50%	2.35	1.25	4

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## Total Daily Use Per Person

Assumes 50/50% male/female

Fixture Type	Lowest	Energy Code	1980's	Before 1980's
Toilet	3.0	3.8	8.2	11.8
Urinal	0	1.3	1.9	4.5
Faucet	0.2	0.9	1.4	1.4
<b>TOTAL</b>	<b>3.2</b>	<b>5.9</b>	<b>11.5</b>	<b>17.5</b>

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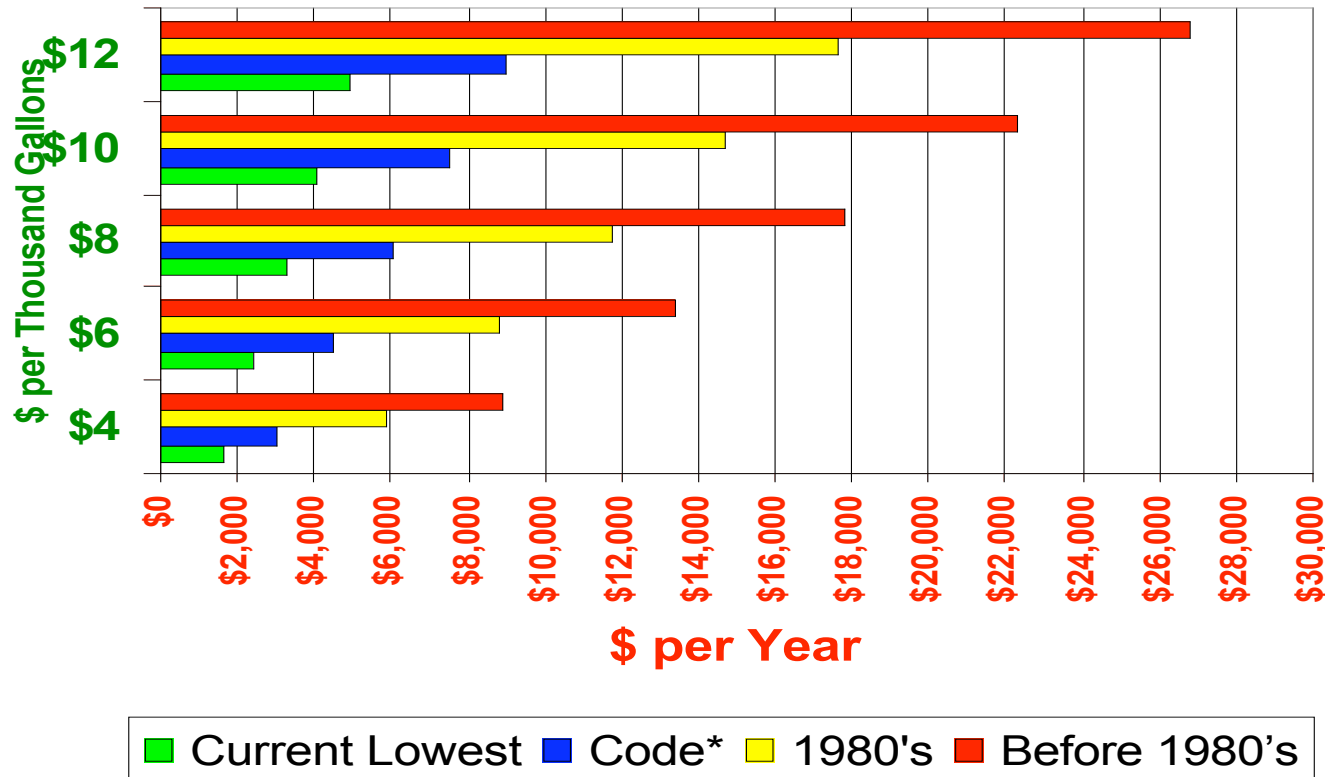


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## Annual Plumbing Fixture Cost

*for a Building with 500 Employees open 255 days/Year*



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## Other Costs to Consider

- Special or hard to find parts
- Maintenance & cleaning
- Special chemicals or cartridges
- Additional energy
- Batteries and electrical hook-ups
- Additional space requirements

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## 3. Being Green

- **US Green Building Council**
  - [www.usgbc.org/](http://www.usgbc.org/)
- **Green Globes Initiative**
  - <http://thegbi.org>
- **ASHRAE SPC 189 and 191**
- **Green Cleaning**
  - [www.greenbiz.com](http://www.greenbiz.com)
- **Project Green Build**
  - [www.projectgreenbuild.org](http://www.projectgreenbuild.org)
- **Green Build**
  - [www.greenbuild.co.uk](http://www.greenbuild.co.uk)
- **Green Guide for Health Care**
  - [www.gghc.org](http://www.gghc.org)
- **Build it Green**
  - [www.builditgreen.org](http://www.builditgreen.org)

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## New Executive Order

Reduce water use  
at federal facilities  
by 2% a year  
through 2015

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# The Bandwagon Effect

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## 4. The Human Factor

- Wrong parts
- Wrong settings
- Wrong matching of equipment

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## How Touchless Faucets Can Save Water

Minimize waste of water that would normally flow down the drain while people are soaping, lathering, scrubbing and drying their hands by eliminating unnecessary and unattended water flow. Save water up to 70%.

**But this assumes a behavioral change by the user.**

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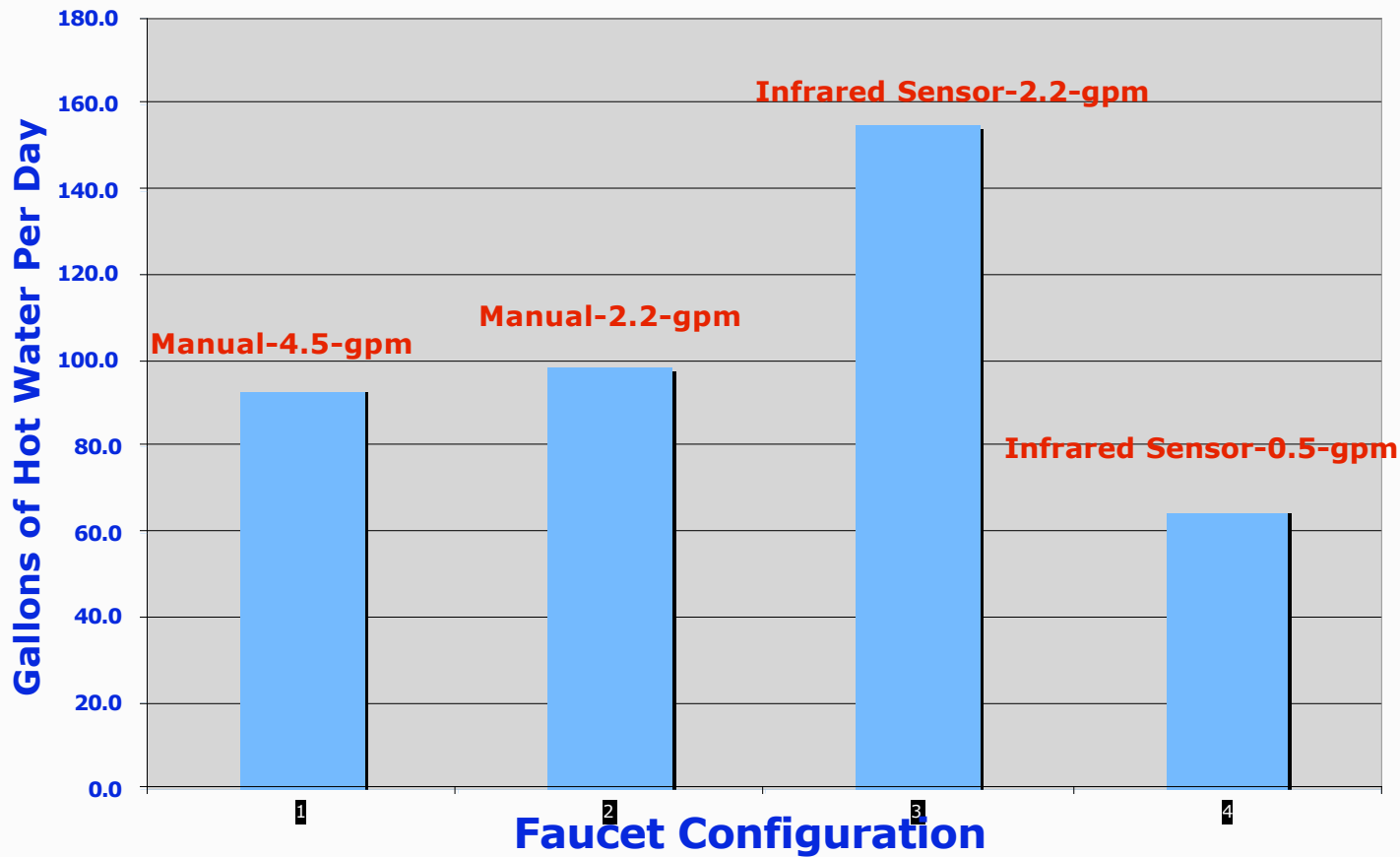
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## ASHRAE Study



Source: Fanney, Dougherty, & Richardson, 2002. "Field Test of a Photovoltaic Water Heater", ASHRAE

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## 5. Alternate Water Sources for Flushing

- Air conditioning condensate
- Foundation drain water
- Rainwater
- Gray water
- Reclaimed water

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## New Bank of America Tower in Manhattan



This LEED Platinum project collects rainwater, gray-water, foundation drain water, and A/C condensate water for reuse in toilet flushing and cooling tower makeup.

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Part of rainwater harvesting system at Austin's new Homeless Shelter.

Rainwater & AC condensate will be used for toilet and urinal flushing and landscape (planter box) irrigation.

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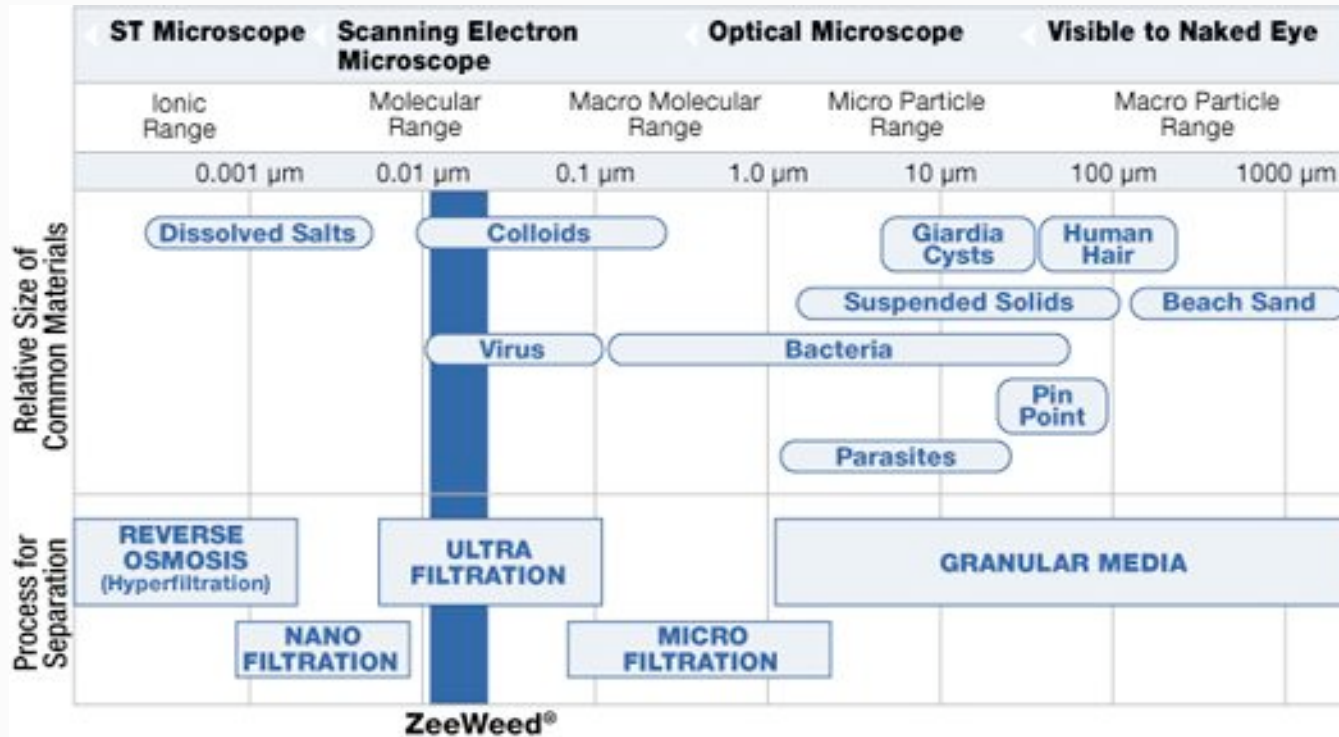
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# Whole System Reuse for Flushing

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## 6. Possible Sources of Help

- Performance contracting
- Tax incentives & rebates
- Technical assistance

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## Three Must See Sources Of Information

1. [US EPA Water Sense Program](http://www.epa.gov/watersense/)  
<http://www.epa.gov/watersense/>
2. [Alliance for Water Efficiency](http://www.allianceforwaterefficiency.org)  
<http://www.allianceforwaterefficiency.org>
3. [California Urban Water Conservation Council](http://www.cuwcc.org)  
<http://www.cuwcc.org>

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