

# **Water Efficiency: Driving Sustainable Buildings and Sites**

## **Setting the Stage for Success**

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CB Richard Ellis

## *TBL or 3BL: Triple Bottom Line*

- *People*
- *Planet*
- *Profit*

*"We don't need to worry about water in Washington state, Georgia is the only area in the country that is having issues..."*



NO FISHING FROM BOAT DOCK

GA. FISHING LICENSE REQUIRED

**GEORGIA**

## Department of Ecology News Release - August 23, 2005

### Weekly drought update: Drought conditions drying up some public water systems

OLYMPIA - Across Washington, various drinking-water systems are experiencing low levels of water in wells and streams, leading to water shortages and a few complete outages. In some cases, pumps have failed as a result of low water conditions and higher demand by people using the water.


"We are definitely beginning to see problems as a result of this year's depleted water supplies," said Denise Clifford, director of the state Department of Health's Office of Drinking Water. Water-system officials say the drought conditions are affecting their ability to deliver water to their customers.

"We are maintaining a supply of water under strict water-use conditions, but the drought continues to affect us," said Jack Troupe of the Carrolls Water Association in Cowlitz County. "Our wells are not recharging as they should be after our recent water shortage, and we are growing concerned as we move into August."



**WASHINGTON**

*While current geographic climate change patterns are not significantly affecting our water supply as compared to other parts of the country, our biggest concern is regional growth.*



**Sustainability:** *Meeting the needs of the present without compromising the ability of future generations to meet their own needs.*

**Greenwash:** *is a term used to describe the perception of consumers that they are being misled by a company regarding the environmental practices of the company or the environmental benefits of a product or service*

Source: [Wikipedia.org](https://en.wikipedia.org/wiki/Greenwashing)

# Vetting Contractors

“Guaranteed” Performance

-Benchmarking

External Resources (BOMA)

# Technology: Cutting Edge?

*Steam Sterilizer Water Mizer*



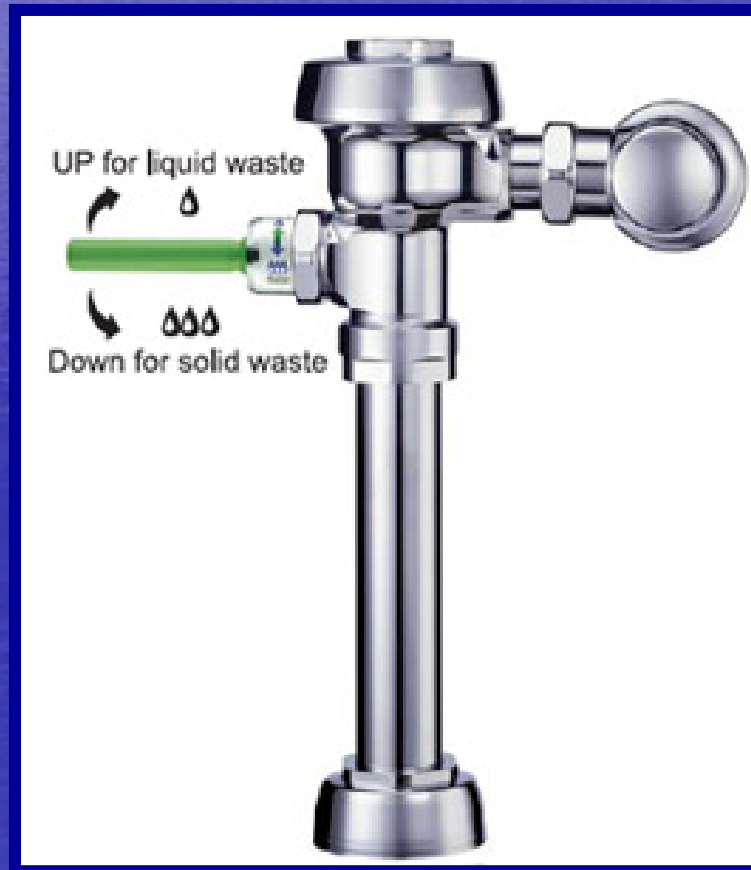
# Technology: Cutting Edge?

## *Waterless Urinals*



# Technology: Cutting Edge?

## *Dual Flush Valves*



# Four Steps to Success!

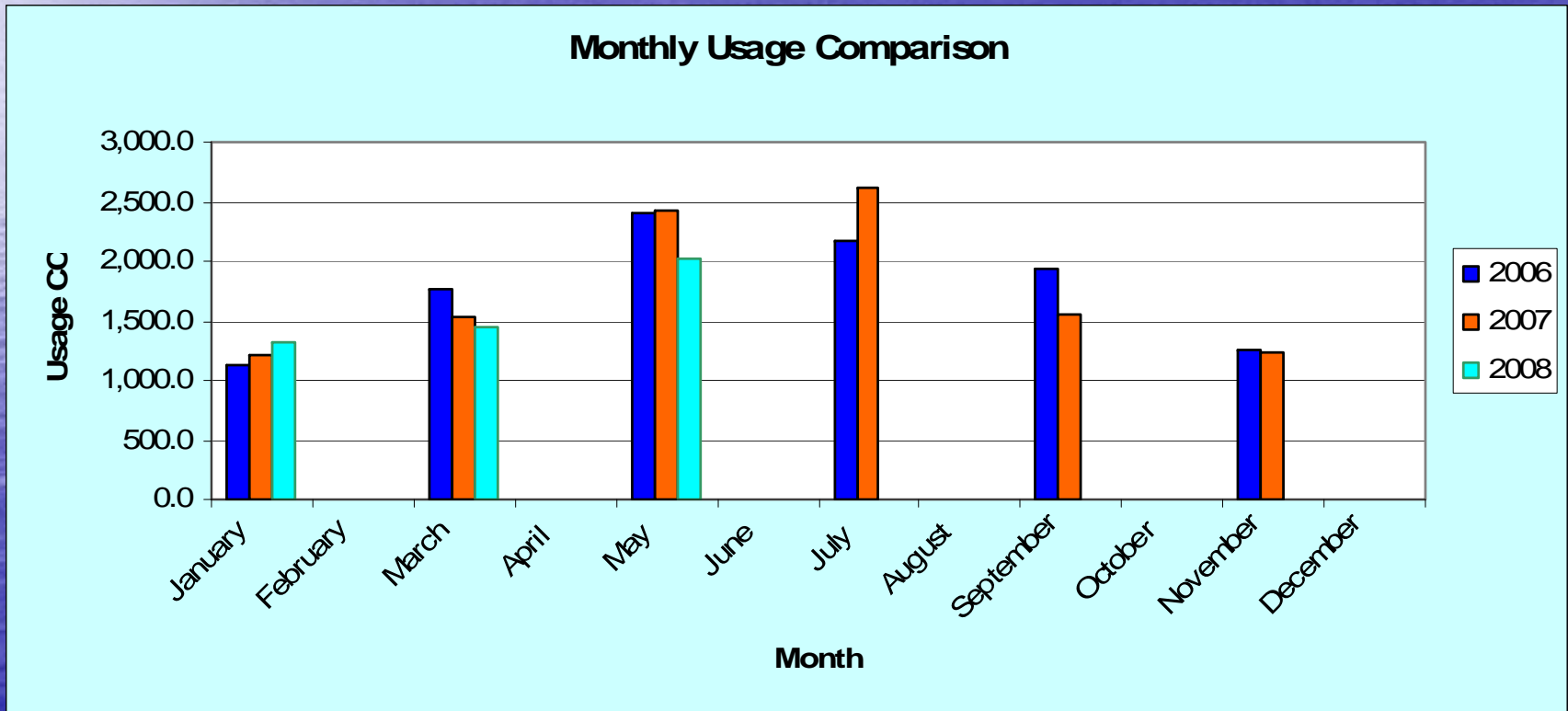
- Step 1: Measure It to Manage It
- Step 2: Owner Motivations
- Step 3: Identify Opportunities
- Step 4: Prove Savings

# First Step: Measure it to Manage it



Facility Name	Baseline Rating (1-100)	Current Rating (1-100)	Baseline Site Energy Intensity (kBtu/Sq. Ft.)	Current Site Energy Intensity (kBtu/Sq. Ft.)	CO2 Reduced (Pounds)	Adjusted Percentage Energy Reduction	Energy Reduction (kBtu (thousand Btu))
1101 Madison Tower	60	75	80.9	65.3	1,161,203.96	18.4%	4,156,647.29
600 Broadway	54	64	103.1	94	339,477.99	8.4%	1,325,494.74
Arnold Pavilion	31	53	134.4	116.7	872,132.96	12.9%	3,537,674.48
TOTAL					2,372,814.91		9,019,816.51

# First Step: Measure it to Manage it



## Second Step: Owner Motivations

What motivations and criteria do investors have with regards to supporting conservation efforts?

- Purely financial (ROI)
- Rate increases (SPU announced double-digit increase)
- Triple Bottom Line (Planet, People, Profit)
- LEED
- Meeting SWP goal (10% by 2010)
- Other

*Understanding investor motivations will help you sell projects.*

# Third Step: Identify Opportunities

## Some examples with financial incentives

- Commercial flush valve toilets & urinals: \$80 - \$120 rebate
- Tank toilets Free replacement or \$80 rebate
- Cooling & refrigeration systems 50% rebate
- Medical equipment 50% rebate
- Process water improvements 50% rebate
- Sprinkler systems Rebates based on upgrades
- Showerheads Free or \$5.00 rebate
- Aerators Free or \$2.00 rebate
- Time of use water meters \$250 for BAS hookup

# Proving Projects

*Water projects* vs. *Energy projects*

Simple water meter

Electrical meters (kW/h)

Human counts

Time accounting

Degree days

Voltage considerations

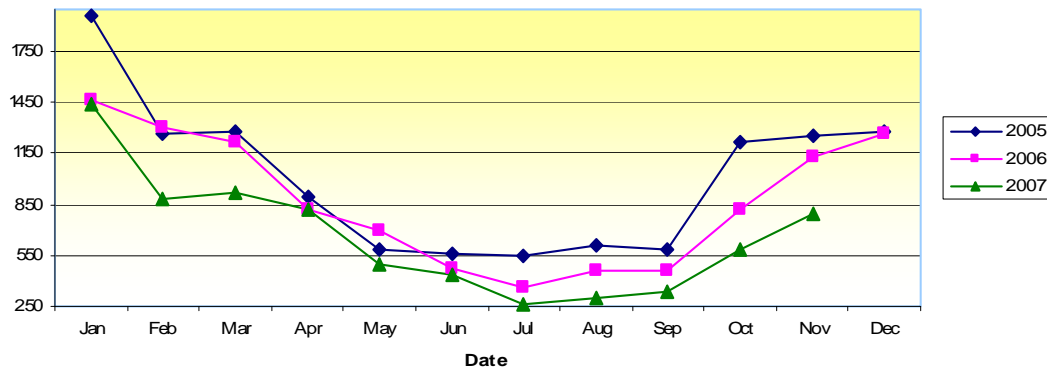
Additional equipment impacts

# Fourth Step: Prove Savings

- Submetering: relatively inexpensive, easy to prove.
- LEED Operations & Maintenance

# Fourth Step: Prove Savings

Arnold Steam



Spent \$6k to install supply & return sensors, upgrade controls and sequence creation.

2005 \$/MLb	2007 \$/Mlb	2007 Usage @ 2005 Price
\$19.53	\$28.76	\$28,178.73
\$37.33	\$27.62	\$33,149.74
\$19.68	\$27.27	\$18,184.54
\$19.81	\$27.34	\$16,363.07
\$20.02	\$28.06	\$10,091.79
\$20.05	\$27.91	\$8,639.93
\$20.06	\$28.16	\$5,174.29
\$19.99	\$28.10	\$5,898.36
\$20.01	\$28.06	\$6,624.00
\$19.70	\$27.61	\$11,428.31
\$19.69	\$27.36	\$15,710.08
\$19.68		\$0.00
\$260,226.68	\$237,988.27	\$159,442.84
<b>Savings 2007 Use @ 2005 \$</b>		<b>\$100,783.84</b>

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Questions?