



Multifamily Housing Water Woes: Wacky Tales of Waste and What to Do?

Wednesday

2:00-3:15pm



Panelists

- **Speakers**

- Russ Horner, Water Management Inc.
- Tabetha McCartney, Jewish Community Housing for the Elderly
- Keith Rassin, eConserve LLC

- **Moderators**

- Michael Freedberg, U.S. Department of Housing and Urban Development



Russ Horner

Water Management Inc.



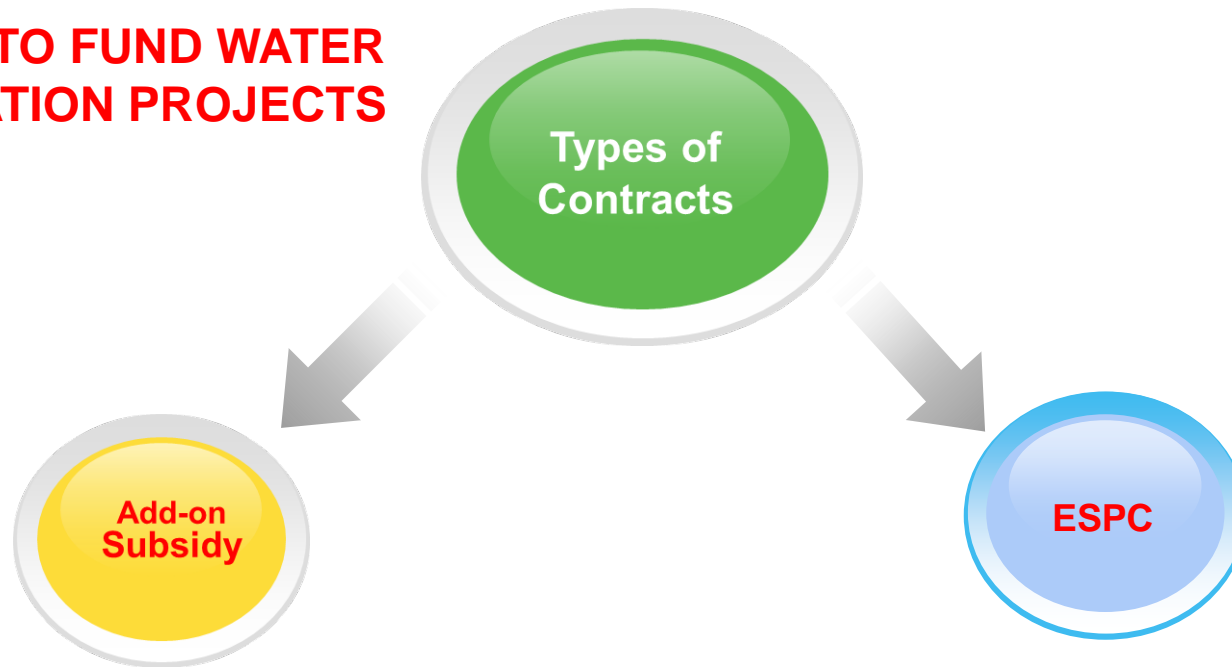
U.S. DEPARTMENT OF
ENERGY



Better Buildings Summit Washington DC



METHODS TO FUND WATER CONSERVATION PROJECTS





Getting new water savings equipment as part of a Add-on Subsidy or as part of a ESPC (Energy Savings Performance Contract) is ideal, but once the project is completed the future maintenance of the installed equipment is typically the responsibility of the Housing Authority.

Unfortunately

Water fixtures fail OPEN



How much savings is available with a water project? The numbers can be huge!

Savings Projection for one unit	
Current usage GPUPD	140
Post usage GPUPD	53
Savings GPUPD	87
Gallons saved per year	31,755
Water/Sewer Rate (per Kgal)	\$10.00
Annual savings	\$317.55

Case Study: Nashville, TN		
Metropolitan Development Housing Authority (MDHA)		
Implementation Year and Second Year Savings		
	1998	1999
Electric Savings	\$374,552.00	\$514,237.00
Water Savings	\$1,087,332.00	\$1,749,495.00

WATER SAVINGS = 76% OF TOTAL SAVINGS

Multifamily Housing Water Woes: Wacky Tales of Waste and What to Do



Family Site: 3.6 Residents / unit

Family Sites	unit counts	%	people/unit
Studio	0	0.0%	1.0
1 Bedroom, 1 Bath	4	11.4%	1.5
2 Bedroom, 2 Bath	14	40.0%	2.5
3 Bedroom, 2 bath	12	34.3%	4.5
4 Bedroom, 2 Bath	5	14.3%	6.0
Totals	35	100%	3.6

Target Calculations	GPD	ADC
Target with fixtures pre 1995	70	250
Target with fixtures 1995 - 2004	55	196
Target with WaterSense	43	154

Senior Site: 1.3 Residents / unit

Senior Sites	unit counts	%	people/unit
Studio	0	0.0%	1.1
1 Bedroom, 1 Bath	72	94.7%	1.3
2 Bedroom, 1 Bath	4	5.3%	1.7
3 Bedroom, 2 bath	0	0.0%	3.0
4 Bedroom, 2 Bath	0	0.0%	5.5
Totals	76	100%	1.3

Target Calculations	GPD	ADC
Target with fixtures pre 1995	70	92
Target with fixtures 1995 - 2004	55	73
Target with WaterSense	43	57



What could possibly go wrong?





What could possibly go wrong?



SAFETY RECALL NOTICE

Flushmate® III Pressure-Assisted Flushing System



The affected Flushmate III Series 503 units can burst at or near the vessel weld seam releasing stored pressure. This pressure can lift the tank lid and shatter the tank, posing impact or laceration hazards to consumers and property damage.

This recall includes Flushmate III units manufactured from October 14, 1997 to June 30, 2009. The first six numerals of the serial number are the date code. The date code range for this recall begins with 101497 (October 14, 1997) and continues through 063009 (June 30, 2009).



What could possibly go wrong?



PCA® Faucet Aerator Working Principles

Position 1

no pressure

O-ring is relaxed



Position 2

normal pressure

O-ring slightly compressed to allow the correct amount of water to pass through



Position 3

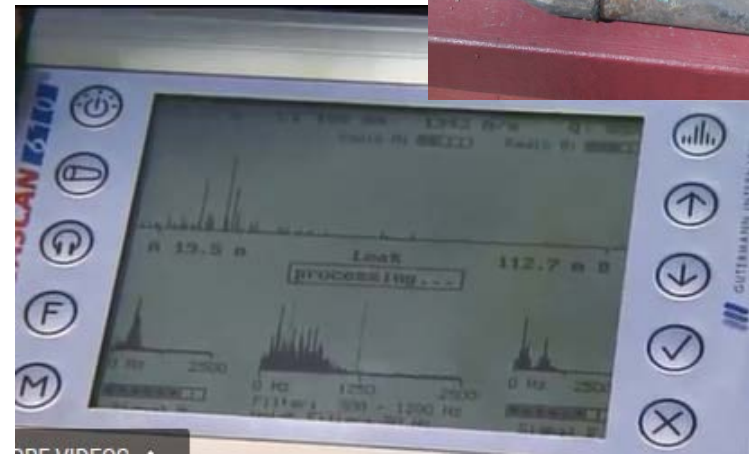
high pressure

O-ring is compressed tighter to reduce water flow





What could possibly go wrong?





How can I protect my water savings?

The IPMVP/Protocol is the industry standard approach for Measurement and Verification (M&V) of savings. There are three major methods for measuring savings. The best Option for ensuring water savings is Option C.

Option A – Equipment Specifications

Option B – Engineered Calculations

Option C – Actual Data



No matter how wacky your tale, there is a solution so -

Don't maintenance concerns stop you from implementing a water conservation program. Just be sure to select your products wisely and know what the necessary preventative maintenance steps need to be implemented.

www.watermgt.com

Tabetha McCartney

**Jewish Community Housing for the
Elderly**



U.S. DEPARTMENT OF
ENERGY

JEWISH COMMUNITY HOUSING FOR THE ELDERLY

- Opened first building in 1971
- 1197 Units on 4 sites in Brighton Newton and Framingham
 - 899 Section 8
 - 170 PRAC
 - 40 LIHTC
 - 88 Market
- Average tenant over 80 years old
- 80% of Tenants have income less than \$19,850/Year
- 78% of Tenants are immigrants and not native English Speakers
- Built and opened first “**GREEN**” building in 2011
- Began renovating portfolio in 2007
- Water Usage ranges from **46 Gallons /BR/Day** to over **130 Gallons/BR/Day**

Leventhal House 2007

- New Kitchens
- New Baths
- Convert Radiant Ceiling Heat panels to two pipe heat pumps
- Low flow shower heads and faucets
- Dual flush toilets

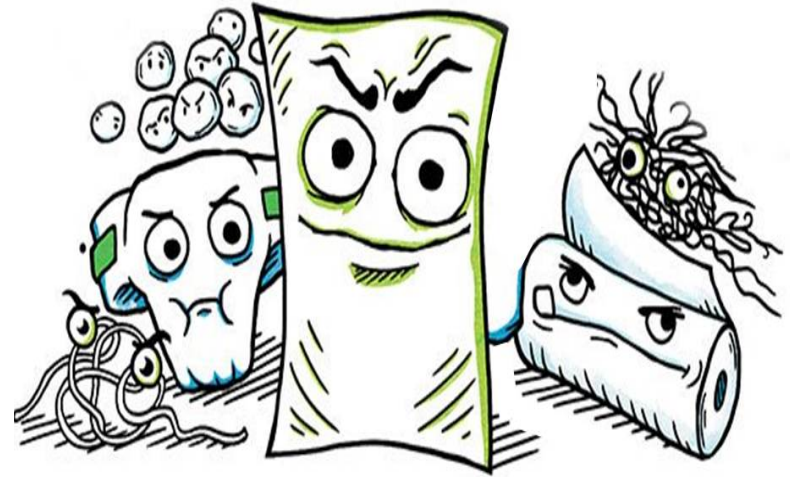
THE OUTBACK DUAL-FLUSH DUNNY



- **LESSON 1 – Know your audience**

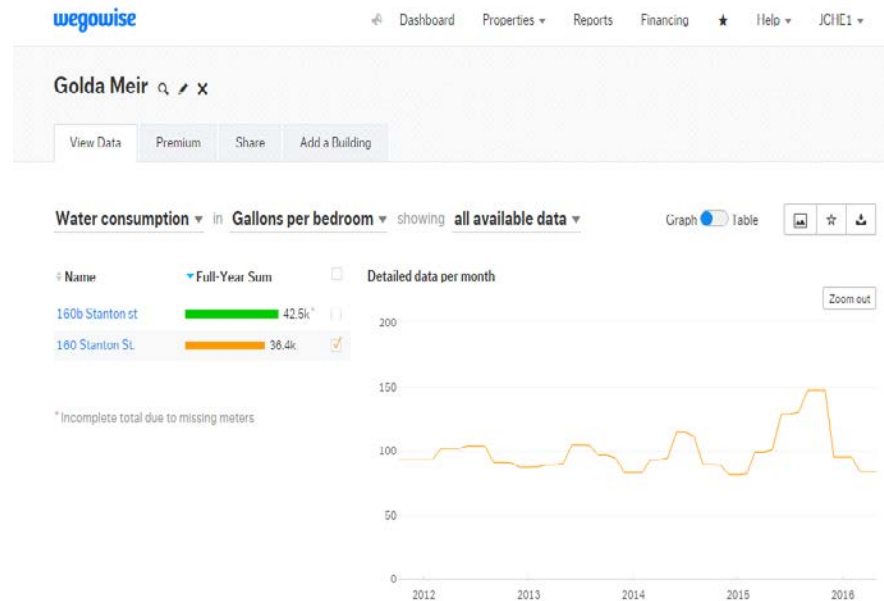
Ulin House Renovation 2016

- Removed Bath Tubs and installed showers
- Installed .8 Gallon flush toilets



- **LESSON 2 – Understand Usage Patterns**

Golda Meir House Irrigation Leak Fall 2015

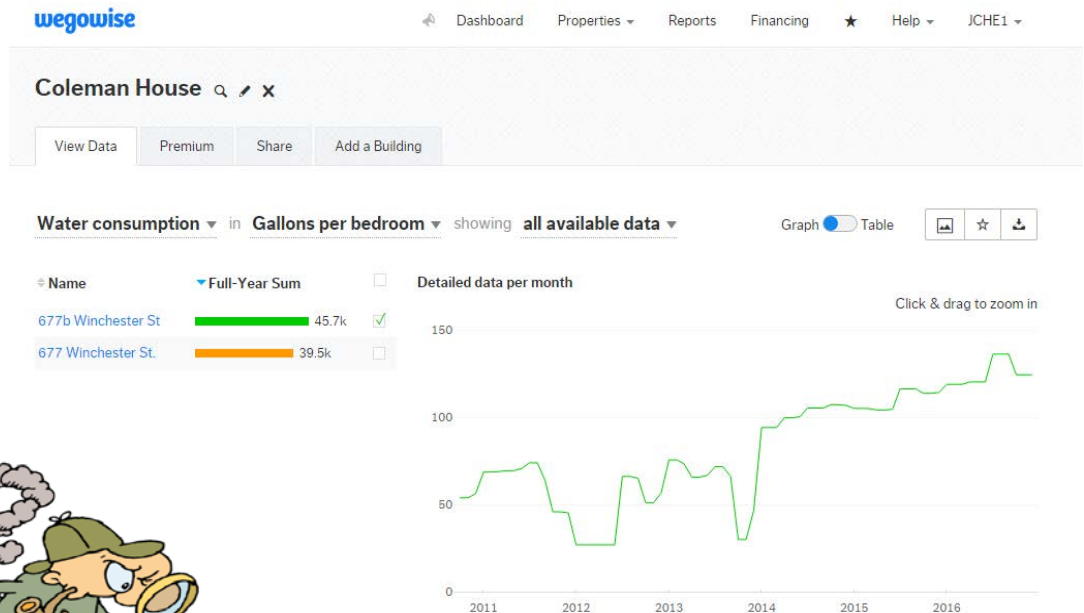


- **LESSON 3 – Monitor, Monitor, Monitor**

Coleman Water Increased Usage WHY???????

Water Usage has increased from an average of 60 Gallons per bedroom per day to over 120 gallons per bedroom per day since 2014.

We have ruled out leaky fixtures, leaks in our irrigation system, leaks between the meter and the building and are now using magnetic flow meters to determine is specific units are to blame.



LESSON 4 – Conservation is a full time job

Keith Rassin

eConserve LLC



U.S. DEPARTMENT OF
ENERGY



Wacky Water Woes – Better Buildings Summit 2017

econservellc.com

713-662-3220

KEITH RASSIN SHORT BIO



UNIVERSITY of HOUSTON | LAW CENTER

Houston Angel Network



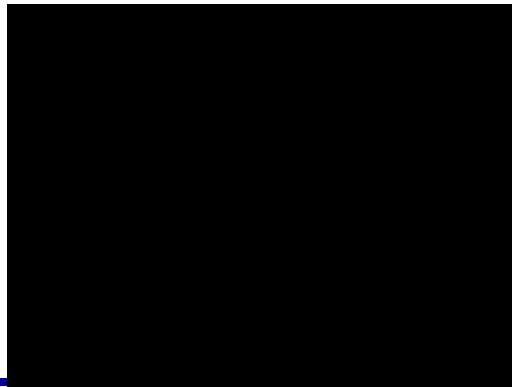
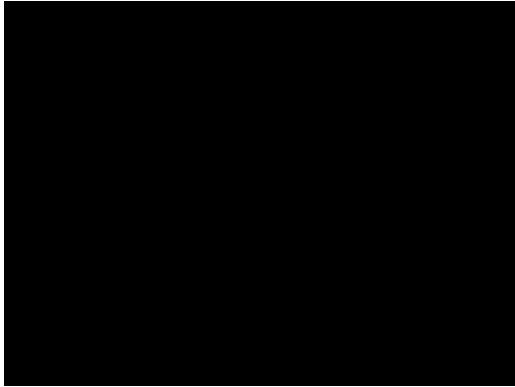
- 20+ yrs of experience / 10 yrs in Water Conservation
- Co-founder, eConserve LLC (*Shared Savings Water Conservation*)
- Co-founder, Amigo Ventures (*Sustainability Investing*)
- Co-founder, Creativelink Technologies (*Big Data Solutions*)
- Management Consulting (*Accenture, E&Y, iPath Solutions -> Perficient*)
- BA (Economics), Tulane University
- JD/MBA, University of Houston
- Boards: Houston Angel Network, University of Houston Cougar Venture Fund
- Adjunct Professor at UH Bauer College of Business



ECONSERVE OVERVIEW

- Headquarters in Houston, Texas
- Offers water conservation services for the multi-family industry
- Focus is on shared savings programs (*toilet replacement and retrofits*)
 - *leak detection and repair*
 - *ongoing monitoring and maintenance*
- Starts with a free water consumption analysis
- National footprint, national recognition
 - *2015 Retrofit Chicago award winner*

THE PROBLEM



THE PROBLEM

- Rising water/sewer costs
- Unreported leaks
- Leaks in vacant units
- Poor quality parts and labor
- Poorly installed toilets/devices
- Resident and maintenance turnover

WHAT WE HAVE TRIED OR OBSERVED

- The lowest possible flow
- The 99 cent showerhead
- Dual flush toilets
- Flapperless toilets
- Extensive education programs (maintenance and residents)
- City run toilet, showerhead and aerator programs
- Retrofits versus toilet replacement

WHAT WORKS

- High quality devices and replacement parts
 - *showerheads, aerators, toilets and repairs*
- Long term monitoring and maintenance programs
 - *scheduled unit-by-unit inspections with repairs*
- Performance based contracts
 - *shared savings – no upfront cost, no financial risk*
- Niagara Stealth 0.8gpf toilets
 - *less water, less maintenance*
- Limited to no resident behavior changes necessary

REMEMBER



Contacts

Taylor Leach

wtleach@econservellc.com

713-662-3220

Keith Rassin

krassin@econservellc.com

713-662-3220



eConserve, LLC
Water Conservation Solutions

econservellc.com

Thank You

Provide feedback on this session in the new Summit App!

Download the app to your mobile device or go to bbsummit.pathable.com

