

Identifying Strong ROI Opportunities for Green Upgrades and Engaging your Entire Portfolio on Incremental Change

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Agenda:

- Why Do We Need to Conserve Water?
- Identifying Areas for Opportunity
- Big Picture Goals in Housing
- Efficient Products
- Real Life Savings Examples
- Rebates and Grants
- Landscaping Is Blue the New Green?
- Engaging Staff and Residents
- Resources

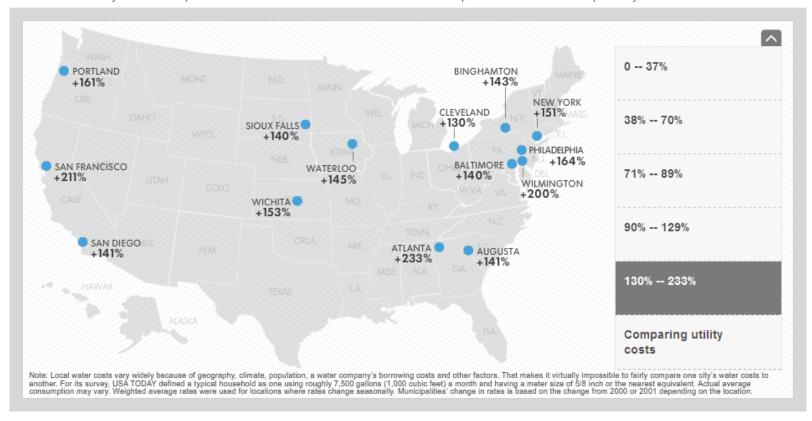






Water costs getting more expensive

A USA TODAY survey of 100 municipalities found residential water bills in at least one in four places have doubled in the past 12 years:



Sources: Black & Veatch, Raftelis Financial Consultants and USA TODAY research of municipal water data; Energy Information Administration, Bureau of Labor Statistics, and USA TODAY research By Kevin A. Kepple, Denny Gainer, Joan Murphy, Doug Carroll, Kevin McCoy, Oliver St. John and Tom McGarrity, USA TODAY

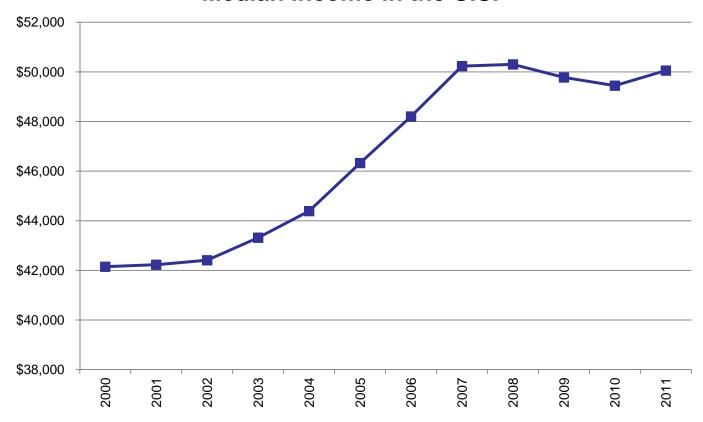






Median income has increased 16% over 12 years.

Median Income in the U.S.*



*Census









Water costs increase faster than income does.







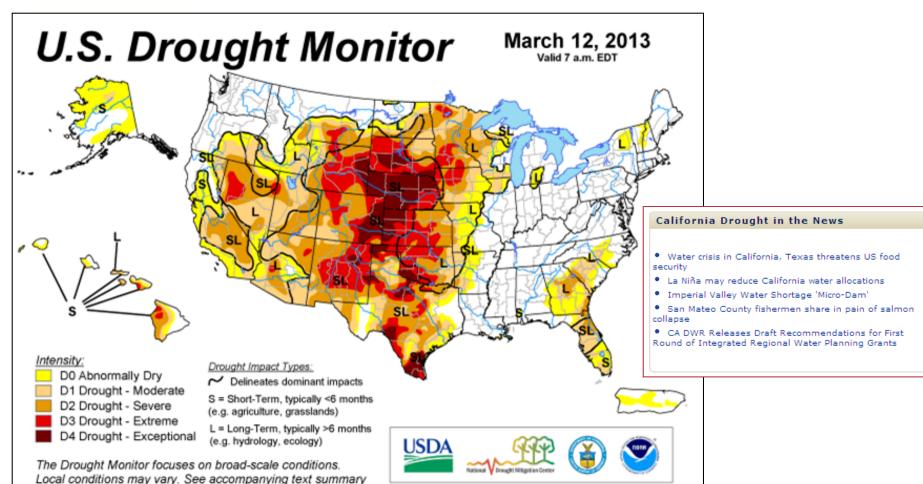
Bills will continue to climb as the following costs are passed on to us...

- Increased price of electricity and other resources needed to supply and treat water
- Repairs to aging water systems
- New sewage treatment plants built
- Federal clean water standards are implemented and enforced









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for forecast statements.



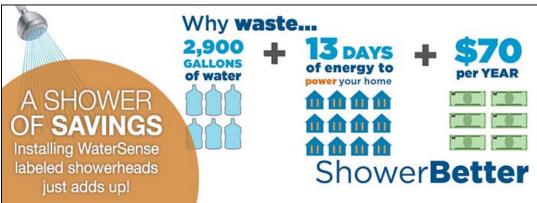


Identifying Areas for Opportunity

Look for the WaterSense® label

A partnership program administered by the EPA. It seeks to protect the future of our nation's water supply by offering people a simple way to use less water with water-efficient products and services. WaterSense® brings together a variety of stakeholders, including manufacturers of water conserving products and consumers of those products to:

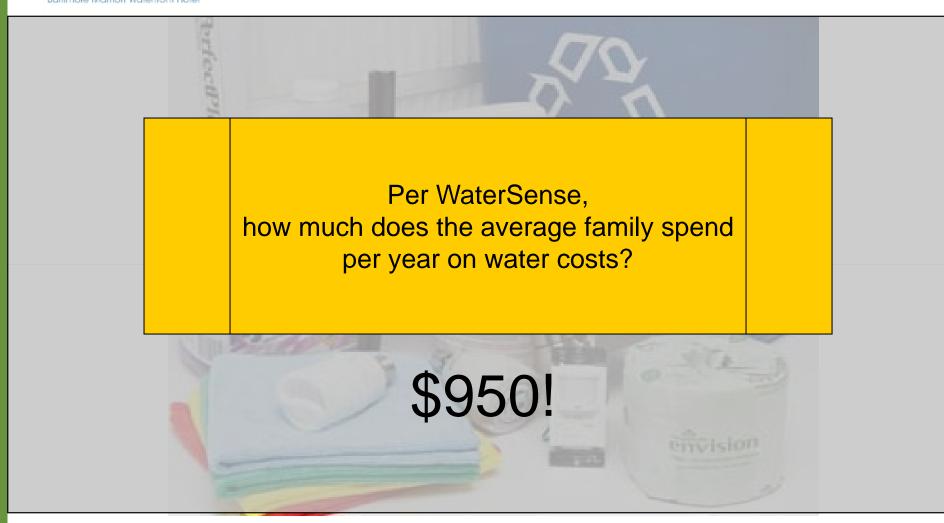
- Promote the value of water conservation
- Provide consumers with easy ways to save water, as both a label for products and a resource to people
- Decrease water use and reduce strain on water resources and infrastructure













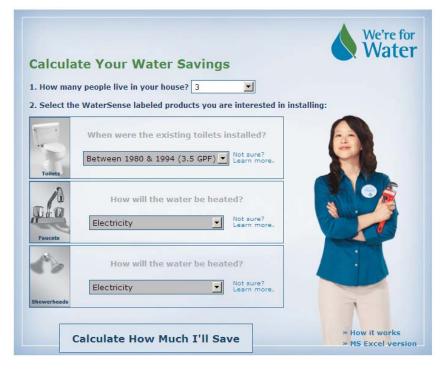




Identifying Areas for Opportunity

Calculate your savings with WaterSense certified faucets and toilets:

http://www.epa.gov/watersense/our_water/start_saving.html_or http://ow.ly/jc34a











Identifying Areas for Opportunity

Calculate your environmental impact and how to reduce it with the EPA:

nousehold Carbon Footpri	Household Carbon Footprint Calculator										
You can use the following online calculator to get a rough "ballpark" estimate of your personal or family's <u>greenhouse</u> gas emissions and explore the impact of taking various actions to reduce your <u>emissions</u> . The calculator is broken into three sections:											
Section 1: Estimate your current total household emissions. Section 2: Explore actions you can take to reduce your greenhouse gas emissions, energy use, and waste disposal costs. Section 3: See how much you can save (in dollars and emissions) by taking the actions you chose in Section 2.											
Instructions Current Emissions	Reduce Emissions	Estimated Savings									
1. The Basics 2. Household Vehicles	s v	3. Home Energy $\sqrt{4}$. Waste									
	Enter your data	Estimated pounds of									
		CO2 per year									
How many vehicles does your household have?	© 1 C 2 C 3 C 4 C 5 C None	· ·									
How many vehicles does your household have? Vehicle 1		· ·									
		· ·									







So How Can I Save Resources and Money?









Big Picture Goals in Housing

- Better management and reduction of all energy consumption, water-sewer, gas and electric
- Reduce costs and minimize the environmental impact
- Incorporate recycle programs to reduce waste
- Use products that will last for the long term and provide the best savings
- Find and use renewable resources (solar, PV, wind) whenever feasible
- Leverage any programs/rebates that provide financial incentives
- Prioritize based on payback time and ROI







Replace standard 2.5 GPM kitchen faucet aerators with 1.5 GPM.

Water Savings = 40%









Replace standard 2.2 GPM bathroom faucet aerators with 1.5 GPM or lower.

Water Savings = up to 84%



1.5 GPM aerator \$0.54



2.2 GPM aerator \$0.54







Replace standard 2.5 GPM showerheads with 1.75 or 1.5 GPM showerheads. Water Savings = up to 40%



1.5 GPM showerhead \$5.65



2.35 GPM showerhead \$5.99







For 1.6 – 3.0 GPF toilets, look to products that adjust the amount of water used to flush with instead of replacing the whole toilet. A water saving alternative at a fraction of the cost.

Water Savings = up to 40%



Dual flush systems



Adjustable flappers







When your toilets are broken or need to be changed out, replace 3.0 and 1.6 GPF toilets with a 1.28, 1.0, or .8 GPF model.

Water Savings = up to 73%



.08 GPF toilet \$196.98



1.28 GPF toilet \$102.98



1.6 GPF toilet \$85.98







Programmable thermostats provide 33% heating and cooling savings compared to non programmable thermostats.









CFL lighting provides up to 80% savings compared to incandescent lighting.



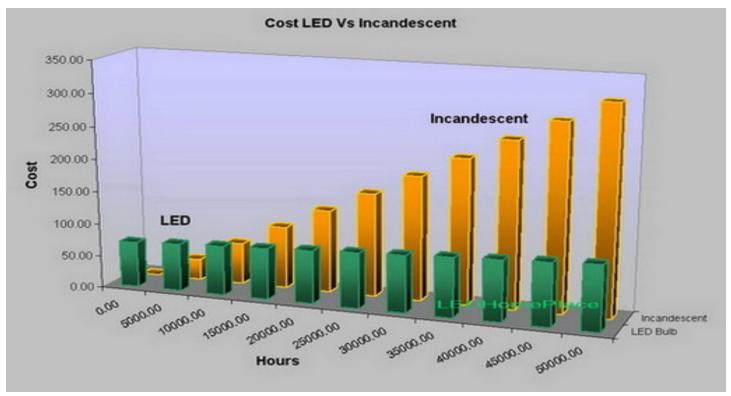


And don't forget to look at LEDs! They last up to 50,000 hours and are even lower wattage!









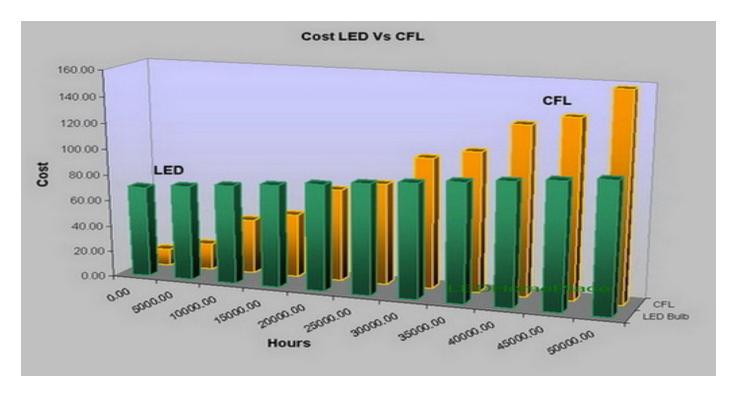
Cost versus Hours: When compared to incandescent bulbs the cost of LEDs is less after about 12,000 hours.

Based on the following assumptions - LED bulb: \$70.00, 6 Watts, 50,000 hours. Incandescent bulb: \$0.67, 60 Watts, 5,000 hours, maintenance on replacement \$1.00









Cost versus Hours: When compared to CFL lights the cost of LED lighting is less after about 25,000 hours.

Based on the following assumptions - LED bulb: \$70.00, 6 Watts, 50,000 hours. CFL Bulb: \$13.00, 14 Watts, 10,000 hours, maintenance on replacement \$2.00







In Unit Water Opportunities

Bathroom

- Showerhead at 1.5 GPM
- Faucet aerator .5GPM to max 1.0 GPM
- Faucets that will last 15 + years
- Toilet replace with .8 GPF, 1.0 GPF, 1.28 GPF, or dual flush
- Toilet flapper use a high quality flapper that lasts for 5 years at \$3 vs. cheap flappers at \$1 last less than one year
- For older toilets that are 3.0 GPF or higher, install a dual flush system that will reduce usage without changing the toilet









In Unit Water & Energy Opportunities

Kitchen

- Faucet aerator 1.5 GPM
- ENERGY STAR® dishwasher and refrigerator
- Faucets that will last 15 + years

Washer

- Use an ENERGY STAR® qualified washer if providing in unit
- Have common washers changed to front load and are ADA

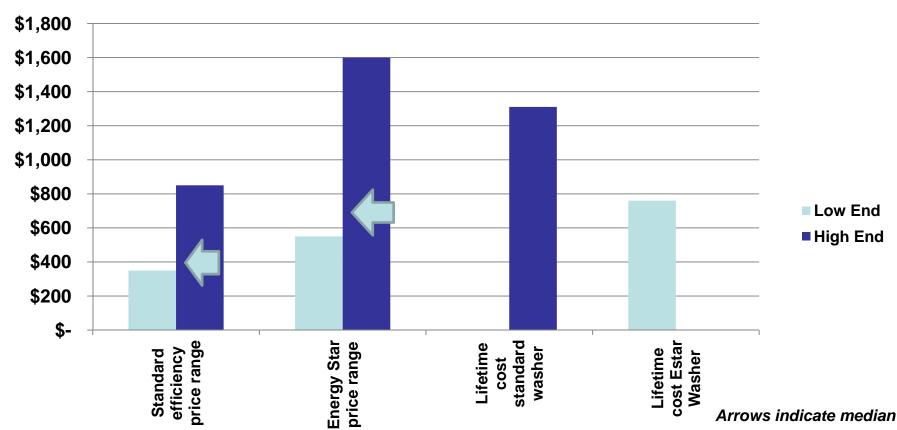








Cost of Ownership ENERGY STAR vs. Non ENERGY STAR Washers









In Unit Energy Opportunities

- Change incandescent lighting to LED or low wattage fluorescent
- Increase attic insulation to minimum R-30
- Seal all AC ducts and repair any holes or broken lines
- Window tint or solar screens
- Install ceiling fans
- AC upgrade to minimum 15 SEER
- Upgrade windows to insulated, double pane low E
- Door seal/weather-strip or replace









Common Area Energy Opportunities

- Photo cells
- Timers
- Motion sensors
- Office equipment off during non working hours









Real Life Savings Examples

Exterior Opportunities

Roof

- Insulate
- Insure proper attic ventilation
- Cool, reflective light colors
- Overhang for shade
- Trees for shade that loose leaves in winter

Flooring

- Ceramic tile or other hard surface
- Minimize carpeting, prefer closed loop Berber

Walls

- Add insulation
- New skin with insulation







Exterior Water Opportunities

Outdoor Faucets

 Cap and lock, eliminate or otherwise control usage and leaks

Pool

- Most pools have leaks
- Auto-fill does not allow you to identify there is a leak
- Need routine check of water loss without auto-fill on





So When Should I Make Upgrades?

- At rehab, major or minor
- At major component replacement
- At normal repair and replacement (sustainability by attrition)
- Specific component upgrade, i.e. water savers cost less than \$20/unit with payback in 30 days to 6 months +/-
- When rebates or other incentive programs provide financial incentives







Real Life Savings Examples

Kitchen	Old Bulbs 2	Watts 40	Total 80	New Bulbs 2	Watts 25	Total 50	Proposed Changes High efficiency t-8 ballast/bulbs-80 total watts fluorescent to 50 total watts FL	1 B \$	31.27		31.27	3B:	R Cost 31.27
Stove	1	40	40	1	9	9	40 total watts incandescent to 9 total watts CFL	\$	2.00	\$	2.00	\$	2.00
Living	0	0	0	0	0	0							
Dining	1	60	60	1	9	9	60 total watts incandescent to 9 total watts CFL	\$	2.00	\$	2.00	\$	2.00
Bath 1	4	40	160	4	12	48	160 total watts incandescent to 48 total watts CFL	\$	20.00	\$	20.00	\$	20.00
Bath 2	4	40	160	4	12	48	160 total watts incandescent to 48 total watts CFL			\$	20.00	\$	20.00
Bedroom 1	1	60	60	1	9	9	60 total watts incandescent to 9 total watts CFL	\$	2.00	\$	2.00	\$	2.00
Bedroom 2	1	60	60	1	9	9	60 total watts incandescent to 9 total watts CFL			\$	2.00	\$	2.00
Bedroom 3	1	60	60	1	9	9	60 total watts incandescent to 9 total watts CFL					\$	2.00
Bedroom 4 Outside 1	Ü				2	0		•	• • • •		• • •	•	• • •
Hall 1	1	60	60	1	9	9	60 total watts incandescent to 9 total watts CFL	\$	2.00	4	2.00	\$	2.00
Laundry	1	60	60	1	9	9	60 total watts incandescent to 9 total watts CFL	\$	2.00	\$	2.00	\$	2.00
Other			0			0							
Totals			680			150	Total Upgrade Cost	\$	61.27	\$	83.27	\$	85.27
KW Saving	S (Old K	W – New K	W/1000)	0.53									
Ho	urs/Day	//Bulb		8									
Hours/Month 240		240			les to mio en Liberto Charac								
KW Price 0.13		Interior Light Change Upgrade											
\$ Savings/Month \$ 16.54				\$ 16.54		Cost/Savings Analysis							
Additional Tax Rate 0.12						o o o d o d villigo i		,	J .,	_			
Total	Monthl	y Saving	ţs.	\$ 18.52									

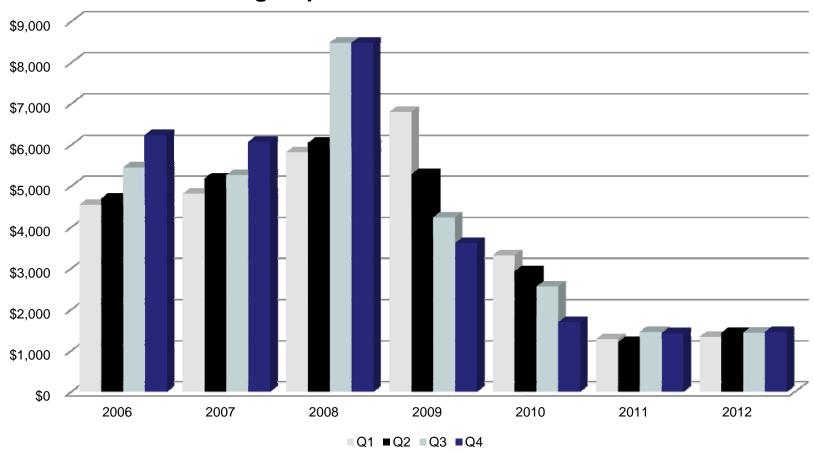






Real Life Savings Examples

Bella Lago Apartments - Water Retrofit Results









True or False: Many utilities offer rebates on the purchase of water or energy efficient products.

True!

Why not get money back for products you would purchase anyway?







Rebate Overview

- Window Film or Solar Screen
- ENERGY STAR® Windows
- ENERGY STAR® Appliances
- Cool / Reflective Roof
- Block Wall Insulation
- Ceiling Insulation Upgrade
- Floor Insulation Upgrade
- Duct Repair / Replacement
- A/C Proper Sizing w/ R-30 Attic Insulation
- Heat Pumps









Examples in Baltimore

GreeNEWit Multifamily Program

- CFLs, aerators, showerheads, smart strips, water heater tank wraps, and pipe insulation
- 100% of cost is covered if approved = FREE to you

Heating & Cooling

Accounts for up to 50% of the energy used at home

- BGE's Smart Energy Savers Program
 - HVAC saving up to \$1,150 per system
 - Lighting discounts up to \$10
 - Appliance rebates up to \$350
 - Recycling rewards
- Maryland Clean Energy Center Offers loans to help cover the cost of certain improvements







Examples in Baltimore

ENERGY STAR® Rebates

- Rebates up to \$3,150
- Measures rebate amount air sealing, insulation measures, gas tankless water heater up to 50% of improvement cost, \$2,000 maximum heating and air conditioning measures

Baltimore PeakRewardsSM Program by BGE

- Part of the BGE Smart Energy Savers Program®
- Helps offset air conditioner demand during periods of "peak" electricity usage, helping to reduce the likelihood of power outages
- As a reward, you get bill credits







Rebates and Grants

Eligible products, pricing, and incentives are subject to change. Be sure to confirm specifics before purchasing. Rebate programs are offered by your local utility providers and subject to their policies.

Please refer to their website or contact them for more details.







Macro Changes

- Sewer charges
- Less TURF
- Xeriscape

Management

- Standing water
- Soft spots

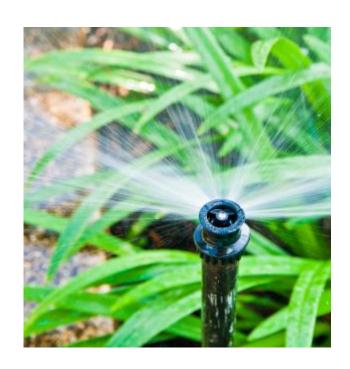






Smart Controllers

- Take the place of timers
- Take micro-conditions into account
- Recalculate plant health needs every day
- Look-back at weather rain, sun, wind, temp - evapostranspiration
- Often come with help \$ rebates CA,
 CO, and others
- Often have simple payback in <2 years
- Sometimes pay back in first watering seasons

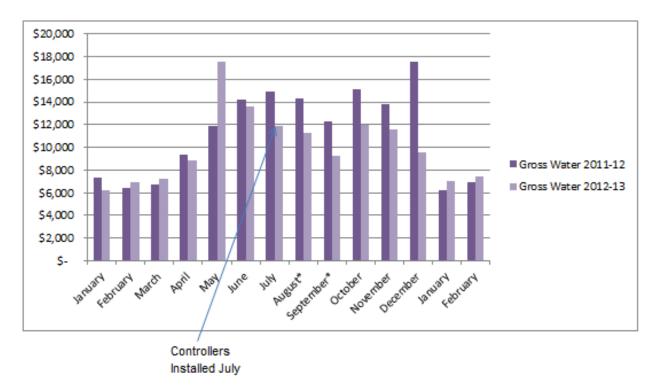






Phoenix, AZ - Smart Controller System

System Cost: \$20,000 System Savings, July - Feb: \$21,054.43 Does not take water rate increases into account

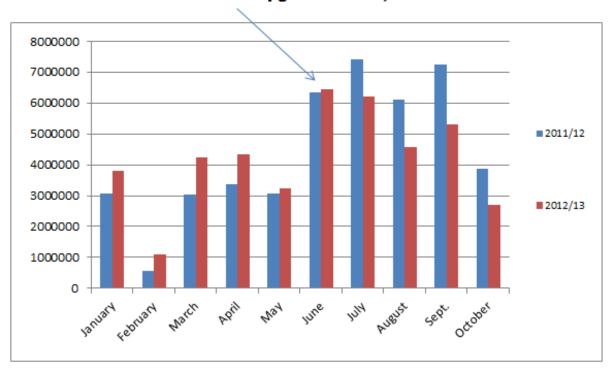








896 unit community Controller Upgrade - June, 2012



23% Water Savings, months 1-4







How Do You Engage, Motivate, Reward & Measure Sustainability Initiatives









Small and scattered

Remote sites

The Challenges

Training demands

Resident control







Client goals and policies

NOI expectations

The Challenges

Billing residents, not conservation Low economic benefit







Best Practices

- Add sustainability policies
- Include in onboarding
- Engage sustainability manager
- Make your efforts visible get people talking







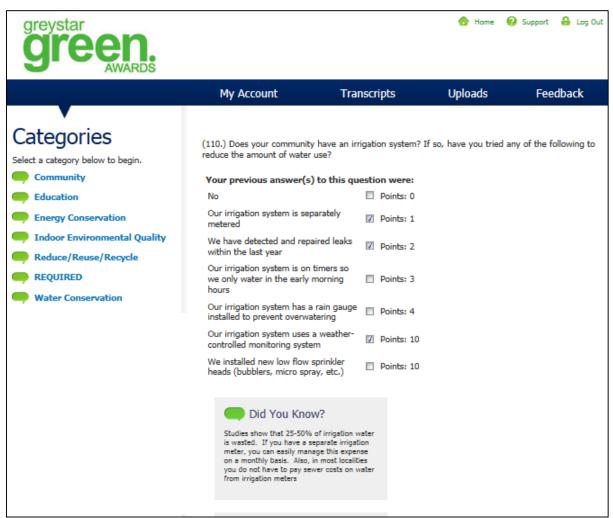


Property Overview									
Property Name Green Me Year Built: 1992 No. of Units: 222 Region: Central-South	Location: Houston, TX 77077 Senior Director: Jackie Rhone Director: Michelle Pawelek RPM: Darla Finol								
Score Card									
CATEGORY	QUESTIONS ANSWERED	% ANSWERED	POINTS EARNED / GOAL	CATEGORY EARNED	EDIT ANSWERS				
Community	18 of 18	100%	13 / 20	Not Yet	P				
Education	4 of 5	80%	10 / 6	Yes	Ø				
Energy Conservation	28 of 29	97%	100 / 64	Yes	Ø.				
Indoor Environmental Quality	10 of 11	91%	30 / 16	Yes	Ø.				
Reduce/Reuse/Recycle	16 of 18	89%	66 / 30	Yes	De la companya de la				
REQUIRED	5 of 5	100%	9/5	Yes	Ø.				
Water Conservation	17 of 17	100%	63 / 47	Yes	S.				
	Total: 98 of 103	Total: 95%							















green.		Results (# of communities or units / % of communities or units)		Rankings	
Category	Green Practices	Average/ Benchmark	Client	Population: Top 15 Clients	Population: All Clients
Community	The Community promotes the use of ridesharing and/or public transportation.	95720%	27%	1st Quartile	1st Quartile
Community	The Community promotes and participates in Earth Hour/Earth Day.	252752%	50%	1st Quartile	2nd Quartile
Education	The Community manager has read the Greystar Sustainability Policies on the team portal.	375178%	82%	4th Quartile	3rd Quartile
Education	The Community provides water and energy conservation tips at move-in.	293 / 61%	45%	4th Quartile	3rd Quartile
Education	The Community talks to its vendors periodically about ways they can help the community with recycling and conservation.	332769%	55%	3rd Quartile	3rd Quartile
Education	The Community includes at least one Green topic each month in team meetings.	311/64%	55%	3rd Quartile	3rd Quartile
Energy Conservation	Percentage of units that carry ENERGY STAR dishwashers:	66,426747%	42%	4th Quartile	3rd Quartile
Energy Conservation	Percentage of units with digital programmable thermostats:	68,927749%	38%	4th Quartile	3rd Quartile
Energy Conservation	The Community changes unit interior light bulbs to CFLs on turns.	135728%	23%	4th Quartile	2nd Quartile
Energy Conservation	The Community uses CFLs or LEDs in the common areas.	194 / 40%	41%	2nd Quartile	2nd Quartile
Indoor Air Quality	100% of residents' air filters are changed at least every 90 days.	199 / 41%	27%	2nd Quartile	3rd Quartile
Indoor Air Quality	The Community uses low VOC paints for its apartment turns.	137 / 28%	32%	4th Quartile	2nd Quartile
Reduce/Reuse/Recycle	The Community has one or more comingled recycling dumpsters.	207/43%	55%	3rd Quartile	2nd Quartile
Reduce/Reuse/Recycle	The Community uses tap water, filtered water, or a water cooler as a bottled water alternative.	454/94%	91%	4th Quartile	4th Quartile
Reduce/Reuse/Recycle	The Community has a document/data destruction (shredding) service that picks up its paper.	258/53%	50%	4th Quartile	2nd Quartile
Required	Per Greystar policy, team members are prohibited from smoking on the premises.	221/46%	50%	1st Quartile	2nd Quartile
Water Conservation	The Community has contacted its utility rebiller to discuss whether the community is maximizing its water, gas, electric, and trash billings to residents.	184/38%	41%	3rd Quartile	2nd Quartile
Water Conservation	The Community replaces toilet flappers on turns.	241/50%	50%	1st Quartile	2nd Quartile
Water Conservation	Percentage of units with low flow aerator faucets:	79,922157%	40%	2nd Quartile	3rd Quartile











Greystar Green @GreystarGreen

NAA Event Helps Apartments Go from "Green to Gold." dlvr.it/34YQB7

Expand



Greystar Green @GreystarGreen

Spring is Almost Here, Check Out these Landscaping Tips dlvr.it/34LgqK









Email









In summary...

Constant communication.

Say thank you.

Small actions x hundreds of communities. Thousands of units = big results.







How important is it to engage your staff and residents in your sustainability initiatives?

Very important!







Resources

To download this presentation and view other materials like rebates in your area, visit <u>GreenBlogic.com/NAAGreen</u>.

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