

# HUD Water Wednesdays Tracking Water and Energy Savings

August 26, 2015
Jonah Schein, EPA
Andrea Schnitzer, EPA
John Mimms, Community
Corporation of Santa Monica



## Housekeeping



- All attendees are muted to minimize background noise.
- Please type questions into the questions/chat box in your GoToWebinar panel. We will have a dedicated time for Q&A.
- A recording of this presentation will be posted on the WaterSense website at <a href="http://epa.gov/watersense/hudwebinars">http://epa.gov/watersense/hudwebinars</a>.





 Jonah Schein, Technical Coordinator for Homes & Buildings, EPA WaterSense Program

 John Mimms, Project Manager, Water Management, Inc.

Community Corporation of Santa Monica

**WaterSense** 

**EPA** 

 Andrea Schnitzer, National Program Manager, EPA ENERGY STAR Program



## The Bigger Picture



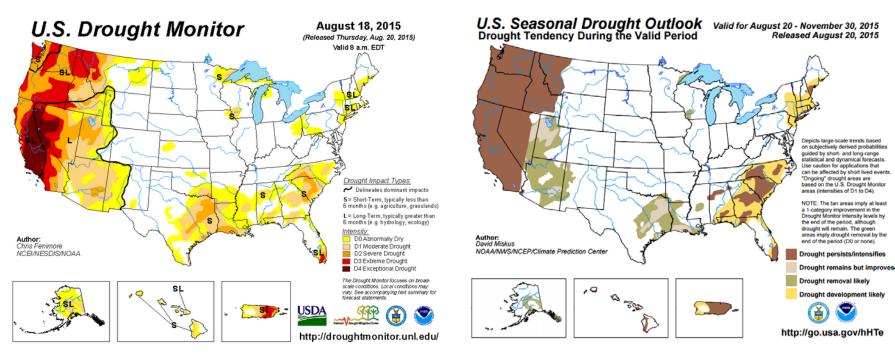
- Federal Requirements
- Energy/Water Nexus
- Costs
- Water Use
- Weather and Climate
- The Opportunity





# Current Newsworthy Driver





**Current Picture** 

**August – November outlook** 



# EPA and WaterSense - the why and what



Water shortages expected in 36 states

Communities face major infrastructure investments

Consumers challenged by rising utility bills

Much of water used outdoors is wasted

No ENERGY STAR-like program for water

look for

Noter Sense

Noter Sense

Reference EPA Criterio

Identify high-performing technology

Promote water efficient behavior/action

Help consumers save money

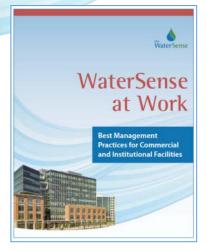
Reduce need to expand infrastructure capacity

Save water for critical needs

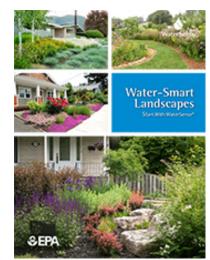
### WaterSense Approaches



look for



Actions that can be taken to reduce water use -- at home, outdoors and at work



Specific fixtures and technologies save water



look for

Practices
Products
People

Partners reach users to change behavior





# What we have covered to date



 Webinar 1 - How to identify water-efficient WaterSense labeled products and purchase them through the Quantity Quotes bulk purchasing platform





Webinar 2 - How to communicate with residents about water efficiency







# What we have covered to date



 Webinar 3 – How to build more water efficient housing using WaterSense and LEED criteria

we build

 Webinar 4 – Covered a variety of best management practices (BMPs) for multi-family housing



# Today's Focus? Tracking Water Use



- Why should we track water use in multi-family buildings?
  - Why's it important?
  - What are the benefits?
- Using ENERGY STAR's Portfolio Manager tool





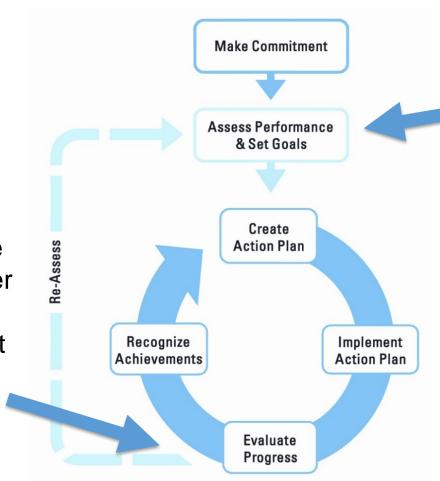


1) Provides a baseline for your management strategies



# Why Track Water Use?





Tracking is where a management plan begins.

And how we know whether or not it worked/what needs to be done next.



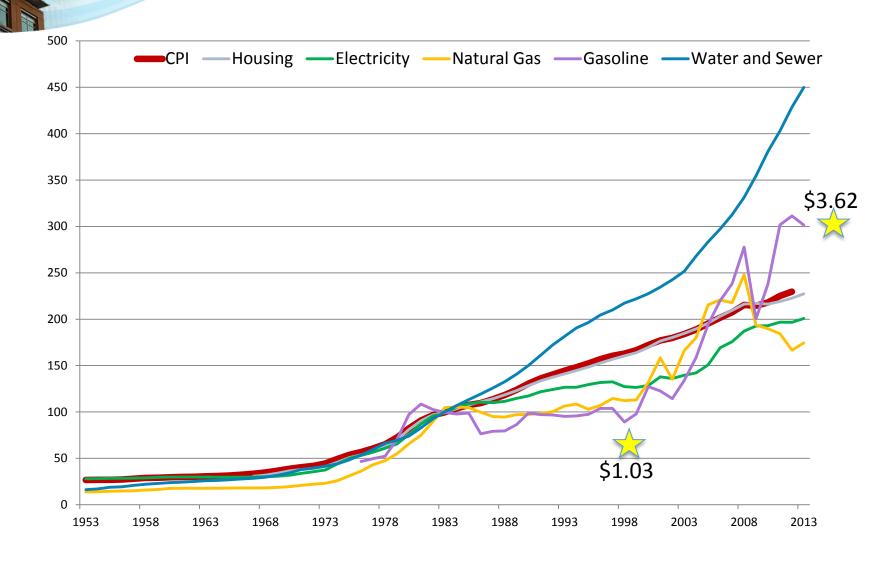


#### Why Track Water Use?

- 1) Provides a baseline for your management strategies
- 2) Helps to monitor and control costs











#### Why Track Water Use?

- 1) Provides a baseline for your management strategies
- 2) Helps to monitor and control costs
- 3) May identify areas that need to be targeted for improvement
- 4) Can indicate anomalies or leaks at a facility





Water Rates

Wastewater Rates

	City	y Water and	Wastewater Bill	
ovember 1, 2	012		Customer Name: Facility XYZ Service Address: 123 Anywhere Lane	
			Summary of Charges: Previous Balance \$6,221.	38
\$2.70/cd \$3.10/cd \$3.73/cd \$4.13/cd		\$270.00 \$465.00 \$932.50 \$206.50 \$1,874.00	Water, Wastewater, Other Charges \$5,752. Adjustments/Deposits \$0.0 Total Charges \$5,752.43	43
tion \$6.23/ccf	550 550	\$3,426.50 \$3,426.50	Prior Meter Reading 32,66  Water Usage This Period (ccf) (d) 44	81 16
rge \$104.89/a arge	cre 2.1	\$27.33 \$220.27 \$204.33 \$451.93	Meter ID: 67890           Current Meter Reading         98           Prior Meter Reading         87           Water Usage This Period (ccf)         10	32 78
		\$5,752.43	Consumption (e)  1200 1000 1000 1000 200 0 0 0 0 0 0 0	
	ovember 1, 2 mber: 987654 : : (a)	cober 1, 2012 ovember 1, 2012 mber: 987654-32  : :(a) \$2.70/ccf	tober 1, 2012 ovember 1, 2012 mber: 987654-32  : :(a) \$2.70/ccf 100 \$270.00 0) \$3.10/ccf 150 \$465.00 0) \$3.73/ccf 250 \$932.50 \$4.13/ccf 50 \$206.50 arges 550 \$1,874.00  ewer) Charges: (b) otion \$6.23/ccf 550 \$3,426.50 eer Charges 550 \$3,426.50	Service Address: 123 Anywhere Lane  Service Address: 123 Anywhere Lane  Service Address: 123 Anywhere Lane  Summary of Charges:  Summary of Charges:  Previous Balance \$6,221.3  Adjustments/Deposits \$0.8  Adjustments/Deposits \$0.8  Meter ID: 12345  Current Meter Reading 32,68  Water Usage This Period (ccf) (d) 44  Water Usage This Period Last Year 66  Water Usage This Period (ccf) 10  Water Usage This Period (ccf)

Water Use

Water Use Trend





Billing Detail:			
Water Charges: (a)			
Tier 1 - (0-100)	\$2.70/ccf	100	\$270.00
Tier 2 - (101-250)	\$3.10/ccf	150	\$465.00
Tier 3 - (251-500)	\$3.73/ccf	250	\$932.50
Tier 4 - (500+)	\$4.13/ccf	50	\$206.50
Total Water Charge	s	550	\$1,874.00

	City Water a	nd Wastewater Bill
Bill Date: October 1, 2012 Due Date: November 1, 20 Account Number: 987654	012	Customer Name: Facility XYZ Service Address: 123 Anywhere Lane
Billing Detail:		Summary of Charges:
Water Charges: (a) Tier 1 – (0-100) \$2.70/ccf Tier 2 – (101-250) \$3.10/ccf Tier 3 – (251-500) \$3.73/ccf Tier 4 – (500+) \$4.13/ccf Total Water Charges	100 \$270.0 150 \$465.0 250 \$932.5 50 \$206.5 550 \$1,874.0	Water, Wastewater, Other Charges \$5,752.43 Adjustments/Deposits \$0.00 Total Charges \$5,752.43
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Other Charges: (c) Fire Service Stormwater Charge \$104.89/ac Base/Service Charge Total Other Charges  Total Charges	\$27.3 re 2.1 \$220.2 \$204.3 \$451.9	7         Current Meter Reading         982           3         Prior Meter Reading         878           3         Water Usage This Period (ccf)         104           Water Usage This Period Last Year         159
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Wastewater (Sewer) Charges: (b	)	
Sewer Consumption \$6.23/ccf	550	\$3,426.50
Total Wastewater Charges	550	\$3,426.50

		Cit	y Water and	Wastewater Bill		
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	te: November 1, 2			Service Address: 123 Anywhere Lane		
Accoun	t Number: 987654	-32				
Billing [	Detail:			Summary of Charges:		
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Tier 3 – (2		250	\$932.50	Adjustments/Deposits	\$0.00	
Tier 4 – (5	(00+) \$4.13/ccf	50	\$206.50	Total Charges \$5,752.43		
Total Wat	er Charges	550	\$1,874.00	Meter ID: 12345		
Wastowa	ter (Sewer) Charges: (b			Current Meter Reading	33.127	
	nsumption \$6.23/ccf	550	\$3,426.50	Prior Meter Reading	32,681	
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Stormwat	ter Charge \$104.89/ad	re 2.1	\$220.27	Current Meter Reading	982	
Base/Serv	vice Charge		\$204.33	Prior Meter Reading	878	
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				Water Usage This Period Last Year	159	
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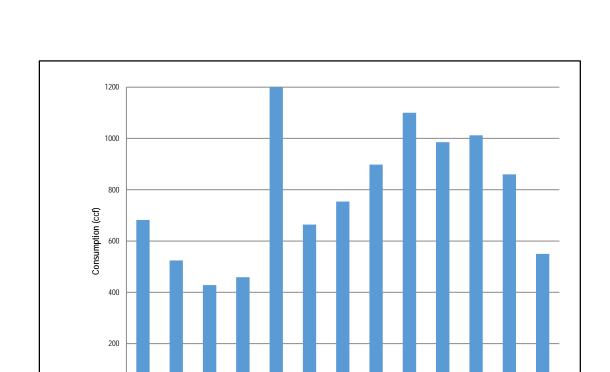




Meter ID: 12345	
Current Meter Reading	33,127
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Water Usage This Period (ccf) (d)	446
Water Usage This Period Last Year	682

Bill Date: October 1, 2012 Due Date: November 1, 2012 Account Number: 987654-32			Customer Name: Facility XYZ Service Address: 123 Anywhere Lane		
Billing Detail:			Summary of Charges:		
Water Charges: (a) Tier 1 – (0-100) \$2.70/ccf Tier 2 – (101-250) \$3.10/ccf Tier 3 – (251-500) \$3.73/ccf	100 150 250	\$270.00 \$465.00 \$932.50	Previous Balance Payment – Thank you Water, Wastewater, Other Charges Adjustments/Deposits	\$6,221.38 \$6,221.38 \$5,752.43 \$0.00	
Tier 4 – (500+) \$4.13/ccf Total Water Charges	50 550	\$206.50 \$1,874.00	Total Charges \$5,752.43  Meter ID: 12345		
Wastewater (Sewer) Charges: (b Sewer Consumption \$6.23/ccf Total Wastewater Charges	550 550	\$3,426.50 \$3,426.50	Current Meter Reading Prior Meter Reading Water Usage This Period (ccf) (d) Water Usage This Period Last Year	33,127 32,681 446 682	
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Bill Date: October 1, 2012			Wastewater Bill			
Bill Date: October 1, 2012 Due Date: November 1, 2012			Service Address: 123 Anywhere	Customer Name: Facility XYZ		
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	1-32					
Billing Detail:			Summary of Charges:			
Water Charges: (a)			Previous Balance	\$6,221.38		
Tier 1 – (0-100) \$2.70/ccf	100	\$270.00	Payment – Thank you	\$6,221.38		
Tier 2 - (101-250) \$3.10/ccf	150	\$465.00	Water, Wastewater, Other Charges	\$5,752.43		
Tier 3 – (251-500) \$3.73/ccf	250	\$932.50	Adjustments/Deposits	\$0.00		
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Total Water Charges	550	\$1,874.00				
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Sewer Consumption \$6.23/ccf	550	\$3,426.50	Prior Meter Reading	32,681 446		
Total Wastewater Charges	550	\$3,426.50	Water Usage This Period (ccf) (d) Water Usage This Period Last Year	682		
Other Charges: (c) Fire Service Stormwater Charge \$104.89/a Base/Service Charge Total Other Charges	acre 2.1	\$27.33 \$220.27 \$204.33 \$451.93	Meter ID: 67890 Current Meter Reading Prior Meter Reading Water Usage This Period (ccf) Water Usage This Period Last Year	982 878 104 159		
Total Charges		\$5,752.43	Consumption (e)			
			1200 1300 1300 1300 1300 1300 1300 1300	I I I I I I I I I I I I I I I I I I I		





# John Mimms, Community Corporation of Santa Monica





# Tracking energy and water with ENERGY STAR

August 26, 2015
ENERGY STAR for Commercial Buildings





#### The ENERGY STAR Program



- An EPA voluntary program
- >85% consumer brand recognition
- Promotes and recognizes superior energy efficiency in products, homes, and buildings
- Information specific to multifamily properties available at <a href="https://www.energystar.gov/multifamily">www.energystar.gov/multifamily</a>





# Benchmarking energy for multifamily properties





#### **ENERGY STAR®**

## Portfolio Manager®

- Management Tool Helps business and organizations by offering a platform to:
  - Assess whole building energy and water consumption
  - Track changes in energy, water, greenhouse gas emissions, and cost over time
  - Track green power purchase
  - Share/report data with others
  - Create custom reports
  - Apply for ENERGY STAR certification
- Metrics Calculator Provides key performance metrics to integrate into a strategic management plan
  - Energy consumption (source, site, weather normalized)
  - Water consumption (municipally supplied potable and reclaimed, alternative)
  - Greenhouse gas emissions (indirect, direct, total, avoided)
  - ENERGY STAR 1-to-100 score (available for many building types)
- → Accessible in a free, online secure platform: <u>www.energystar.gov/benchmark</u>

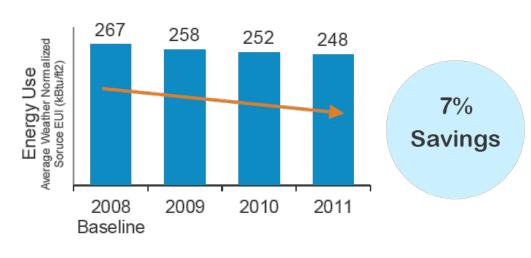


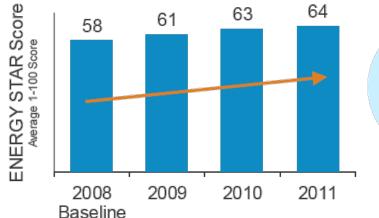


#### Value of benchmarking

Consistent benchmarking in buildings results in energy savings and improved performance

#### **Energy Savings in Portfolio Manager**





6 point increase

Source:

http://www.energystar.gov/ia/business/downloads/datatrends/ DataTrends Savings 20121002.pdf?8d81-8322





## Properties benchmarking in Portfolio Manager



- All property types
  - 400,000+ buildings benchmarking energy
  - 25% of all benchmarking water
- Multifamily properties
  - 28,000 properties and 3.5 billion square feet benchmarked
  - 13,000 properties have received ENERGY STAR 1-100 score





#### Collaboration on energy efficiency















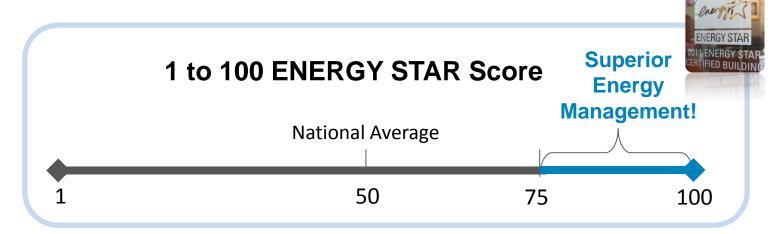






#### 1-100 ENERGY STAR Score

- Help businesses protect the environment through superior energy efficiency
- Motivate organizations to develop a strategic approach to energy management
- Convey information about energy performance in a simple metric that can be understood by all levels of the organization
- Explain how a building performs, not why.







#### What do you need to get a score?

- Property Use Details
  - Gross Floor Area
  - Total Number of Residential Living Units
    - Number of units in a low-rise setting
    - Number of units in a mid-rise setting
    - Number of units in a high-rise setting
  - Total Number of Bedrooms
- Complete Energy Data
  - 12 full calendar months
  - All fuels
  - All tenant & common areas
- Zip Code
  - For EPA to retrieve climate/weather details

Required for 1-100 ENERGY STAR score and certification:

- 20+ units
- 12 months of wholeproperty data





## Come on, hardly anyone has whole-property energy data!

- Benchmark the energy you can measure
  - Common area
  - Meters you control
- Estimate your whole-property energy use
  - Existing USGBC guidance
  - Forthcoming HUD guidance
- Ask your utility to provide aggregate wholeproperty data





#### Utilities providing aggregate data

- Austin Energy (TX)
- Consolidated Edison (NYC)
- Eversource (MA; formerly NSTAR)
- National Grid (MA)
- National Grid (NYC)
- Peoples Gas (IL)
- PSEG Long Island (NY)
- Washington Gas (DC)





# **ENERGY STAR** certification for multifamily properties





## **ENERGY STAR Multifamily Property Lifecycle Recognition Opportunities**

- Design Designed to Earn the ENERGY STAR
  - Available through the ENERGY STAR Multifamily High Rise program
  - Must demonstrate that design is at least 15% more efficient than ASHRAE 90.1-2007; and
  - Design must score 75 or higher in ENERGY STAR Portfolio Manager
- Build ENERGY STAR Certification of Units
  - Newly constructed or substantially rehabilitated units if built to meet specific design guidelines
  - 3<sup>rd</sup> party tested and verified through the construction process
- Operate ENERGY STAR Certification of Properties
  - Available for properties with 20 or more units
  - Must score 75 or higher in ENERGY STAR Portfolio Manager based on whole property energy use for at least 12 months of operation.
  - Verification by a Professional Engineer or Registered Architect

Learn more at <u>www.energystar.gov/multifamily</u>





## How do I earn ENERGY STAR certification for my property?

- 1. Benchmark in Portfolio Manager
  - 12 months of whole-property energy data
  - 20+ units
- 2. Earn an ENERGY STAR score of 75 or higher
- 3. Begin the online application in Portfolio Manager
- 4. Have a Licensed Professional (LP) conduct a site visit
- 5. Complete and submit the application
- 6. Respond to questions from EPA, if necessary
- 7. Receive notification of the application's status













## **FORESTCITY**









# Tracking water use in Portfolio Manager

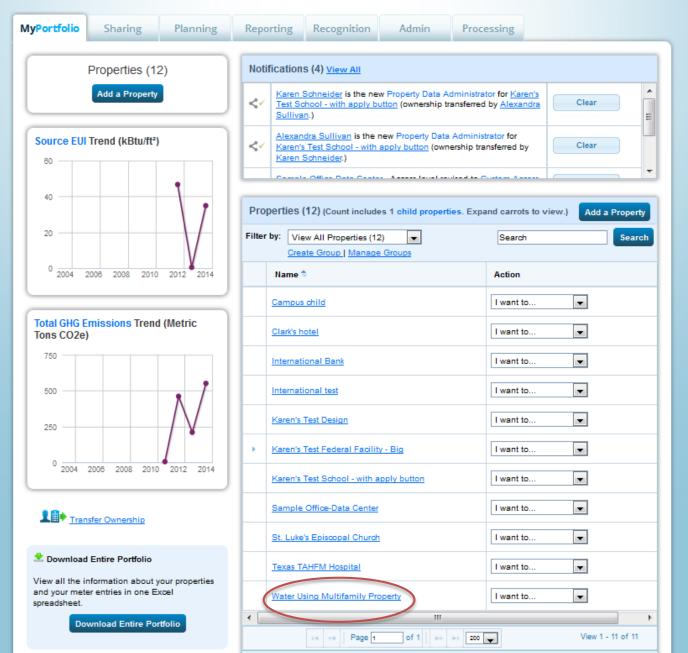




#### Using Portfolio Manager to track water use

- More than 100,000 properties track water use in the tool
- Enter at least 12 months of water data to generate a water use intensity value
- Multiple ways to track water consumption for indoor, outdoor, combined indoor/outdoor or other
  - Municipally supplied potable
  - Municipally supplied reclaimed
  - Alternative water generated on-site
  - Other
- Create an account or login via <u>www.energystar.gov/portfoliomanager</u>





N/A

N/A

Change

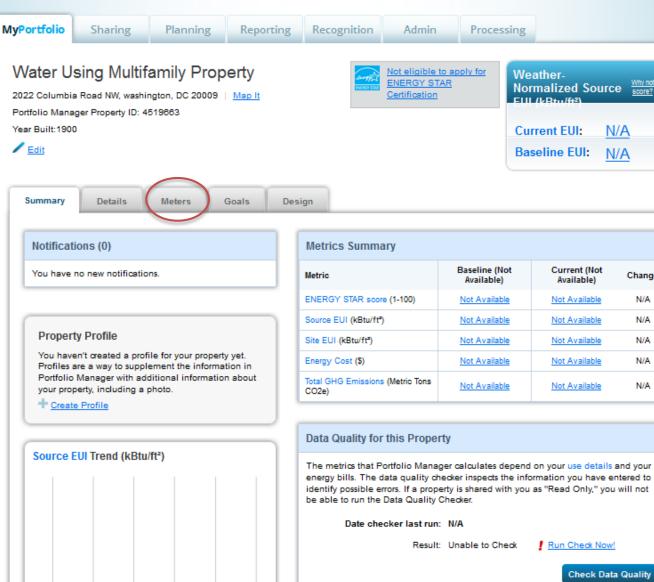
N/A

N/A

N/A

N/A

N/A



2012

2010

2004

2006

2008

2014

Sharing this Property



#### Get Started Setting Up Meters for Water Using Multifamily Property

There are four ways to enter meter data. First, you can enter manually, starting below. Second, you can set up your meters below, then upload a specially formatted spreadsheet with just your bill data. Third, for advanced users, you can use our upload tool that allows you to set up all of your meters and enter bill data. And finally, you can hire an organization that exchanges data to update your energy data automatically.

_		
STA.	Sources of Your Property's Energy	Tracking Energy
	What kind of energy do you want to track? Please select all that apply.	To track your energy, create an
	☐ Electric	energy meter for each source of energy from a utility, a neighboring
	Natural Gas	building, or an onsite solar or wind
	Propane	panel. If you purchase a raw fuel (e.g. gas) and produce your own fuel
	Fuel Oil (No. 2)	(e.g., electricity or chilled water), you
	Diesel	only need a meter for the fuel you purchased (e.g. gas), and not for the
	District Steam	fuel you produce.
	District Hot Water	Entering Your Meters in
		Bulk
	District Chilled Water	For advanced users, you may prefer
	Don't see your energy sources?	to use the upload tool to set up all of your meters with one click
	See more enclar sources?	0 0 0 0 0 0 0 0 0 0 0 0 0 0
		Automate Your Meter Entries
SPA .	Your Property's Water Usage	If you have a lot of meters, you may want to consider hiring an
	What kind of water do you want to track? Please select all that apply.	organization that exchanges data to automatically update your energy
	Municipally Supplied Potable Water	consumption. <u>Learn more</u>
	How Many Meters? 1	
	Outdoor	
	Combined Indoor/Outdoor or Other	
	Municipally Supplied Reclaimed Water	
	Alternative Water Generated On-Site:	
	Other:	

Get Started!

ancel



#### Manage Bills (Meter Entries) for Water Using Multifamily Property

You may select one of your meters to get started. Or, if you are coming here from your meter list, a meter may already be selected.

Potable Indoor Meter • Display Year(s): 2015 × Usage Start Date End Date Cost (\$) Last Updated Estimation MGal (million gallons) (US) 8/24/2015 12/1/2014 1/1/2015 9.88 SCHNITZERA 8/24/2015 1/1/2015 2/1/2015 9.9 SCHNITZERA 8/24/2015 2/1/2015 3/1/2015 9.89 SCHNITZERA 8/24/2015 3/1/2015 4/1/2015 9.75 SCHNITZERA 8/24/2015 4/1/2015 5/1/2015 9.75 SCHNITZERA 8/24/2015 5/1/2015 6/1/2015 9.77 SCHNITZERA 8/24/2015 6/1/2015 7/1/2015 9.67 SCHNITZERA 8/24/2015 7/1/2015 8/1/2015 9.56 SCHNITZERA 8/24/2015 8/1/2015 8/24/2015 9.56 SCHNITZERA

X Delete Selected Entries

- Add Another Entry



Upload data in bulk for this meter:

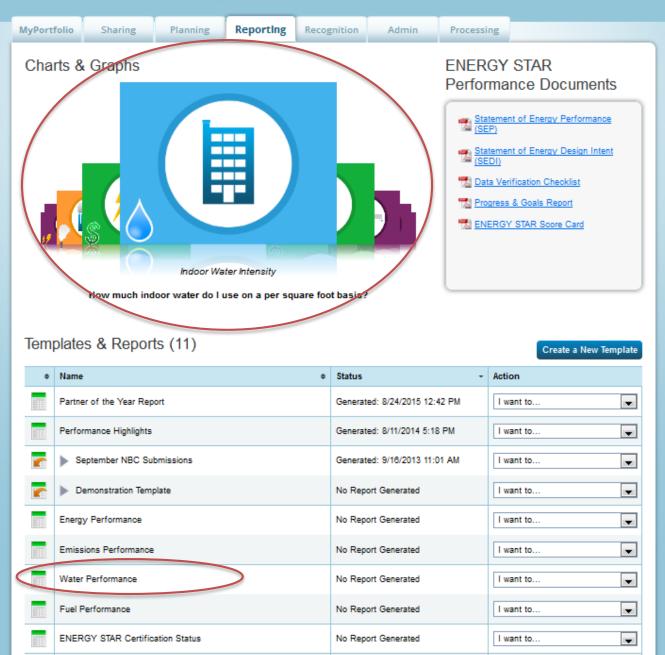
You can copy/paste into the table above (instructions in this FAQ), or upload an Excel spreadsheet using our <u>spreadsheet</u> template.

Browse...

No file selected.

Upload

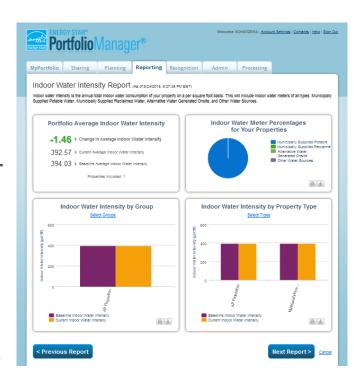






#### **Reports and Charts**

- Generate charts and graphs
  - See water use intensity across your portfolio, by use type, by property type, by building group
  - Download tables of average water use intensity by group, property type, state
- Quickly generate reports
  - Water performance report
  - Create your own reports using the 100s of metrics available







### 1-100 Score for Water Efficiency?

- ENERGY STAR and WaterSense are working together to assess feasibility of a water score for multifamily properties
- EPA plans to circulate a short survey this fall to gather additional information about water use in this sector
- If you'd like to help make a score for water efficiency possible:
  - Open a Portfolio Manager account
  - Start tracking energy and water use
  - Respond to the survey when it becomes available





#### **Free Training Resources**

- Quick-start guides
- Live and recorded webinars
- Express videos short animated demos





www.energystar.gov/buildings/training





#### Other helpful resources

- ENERGY STAR Building Upgrade Manual
- ENERGY STAR Guidelines to Energy Management
- TIAA-CREF case study
- City of Seattle Office of Sustainability & Environment case studies
- No- and Low-Cost Checklist for Saving Energy and Water in Multifamily Housing

Multifamily resources available at <a href="https://www.energystar.gov/multifamily">www.energystar.gov/multifamily</a>





### **Need Help**

- Ask a Question
  - www.energystar.gov/BuildingsHelp
- Take a Training
  - 3-5 minute You Tube Videos
  - Step-by-Step PDF Documents
  - Live and recorded webinars
  - www.energystar.gov/buildings/training
- Sign up for webinars
  - http://esbuildings/webex.com
- Review Technical Documents
  - http://www.energystar.gov/buildings/facility-owners-andmanagers/existing-buildings/use-portfoliomanager/understand-metrics





#### **For More Information**

Andrea Schnitzer
Phone (202) 343-9064
schnitzer.andrea@epa.gov



www.energystar.gov/multifamily







# Questions?



# Future HUD Water Wednesday Webinars





	http://epa.gov/watersense/hudwebinars
September 16 (date change)	Incorporating Green Infrastructure into Housing Developments Learn about EPA resources to help integrate green infrastructure and hear about experiences from HUD grantees
October 28*	Greywater Reuse – Is it Right for Your Facilities?  Learn more about greywater reuse and experiences of HUD grantees who have worked with cities to implement projects.

<sup>\*</sup> Dates subject to change.



# Help HUD Help You!





- In concert with this training, HUD is requesting feedback on water issues via the public forum "Water Watch" on Switchboard.
- http://switchboard.uservoice.com/for ums/293865-water-watch
- Please let them know (a) what challenges your community or organization is facing with water access and water quality; and (b) what more do you think HUD can do to help?



## WaterSense Information



#### Visit us online!

- www.epa.gov/watersense
  - HUD webinars at www.epa.gov/watersense/hudwebinars
  - BMPs at www.epa.gov/watersense/commercial
- www.facebook.com/epawatersense
- www.twitter.com/epawatersense

#### **Questions?**

E-mail: watersense@epa.gov

Helpline: (866) WTR-SENS (987-7367)

