

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com



look for



The EPA Water Score a WaterSense-ENERGY STAR Effort

Jonah Schein
U.S. EPA WaterSense
October 2017



Agenda



- Why a Water Score?
- Portfolio Manager and the ENERGY STAR Scores
- How EPA Developed the Water Score
- Examples of the Score in Action
- Questions



ENERGY STAR®

PortfolioManager®

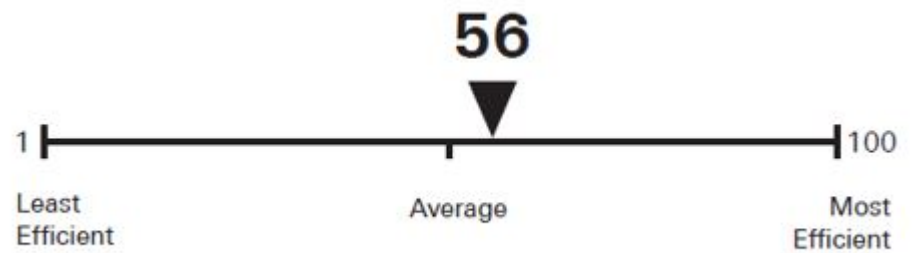


Management Tool

- Assess whole building energy, water, and waste consumption
- Track changes in performance over time
- Create custom reports
- Share/report data with others
- Apply for ENERGY STAR certification (*based on energy performance only*)



EPA's 1-100 Water Score for Multifamily Buildings

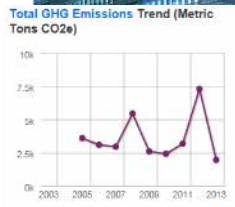
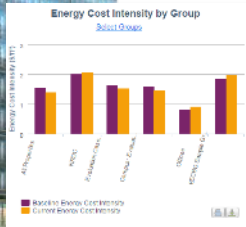
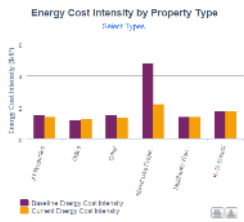
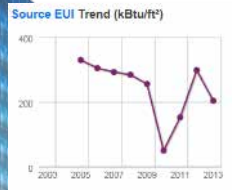
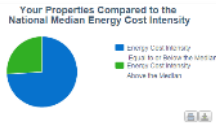


Launching
October 8th!

ENERGY STAR for Buildings and Plants



Voluntary EPA program that delivers environmental benefits and financial value through superior energy efficiency.





Who Uses Portfolio Manager Anyway?



- 500,000+ properties benchmarking energy use
 - 200,000+ properties benchmark energy/water using web services
 - 110,000+ properties benchmark water use
- 31,000+ ENERGY STAR certified properties
- 40% of U.S. commercial buildings space
- Leveraged by municipal/state benchmarking requirements

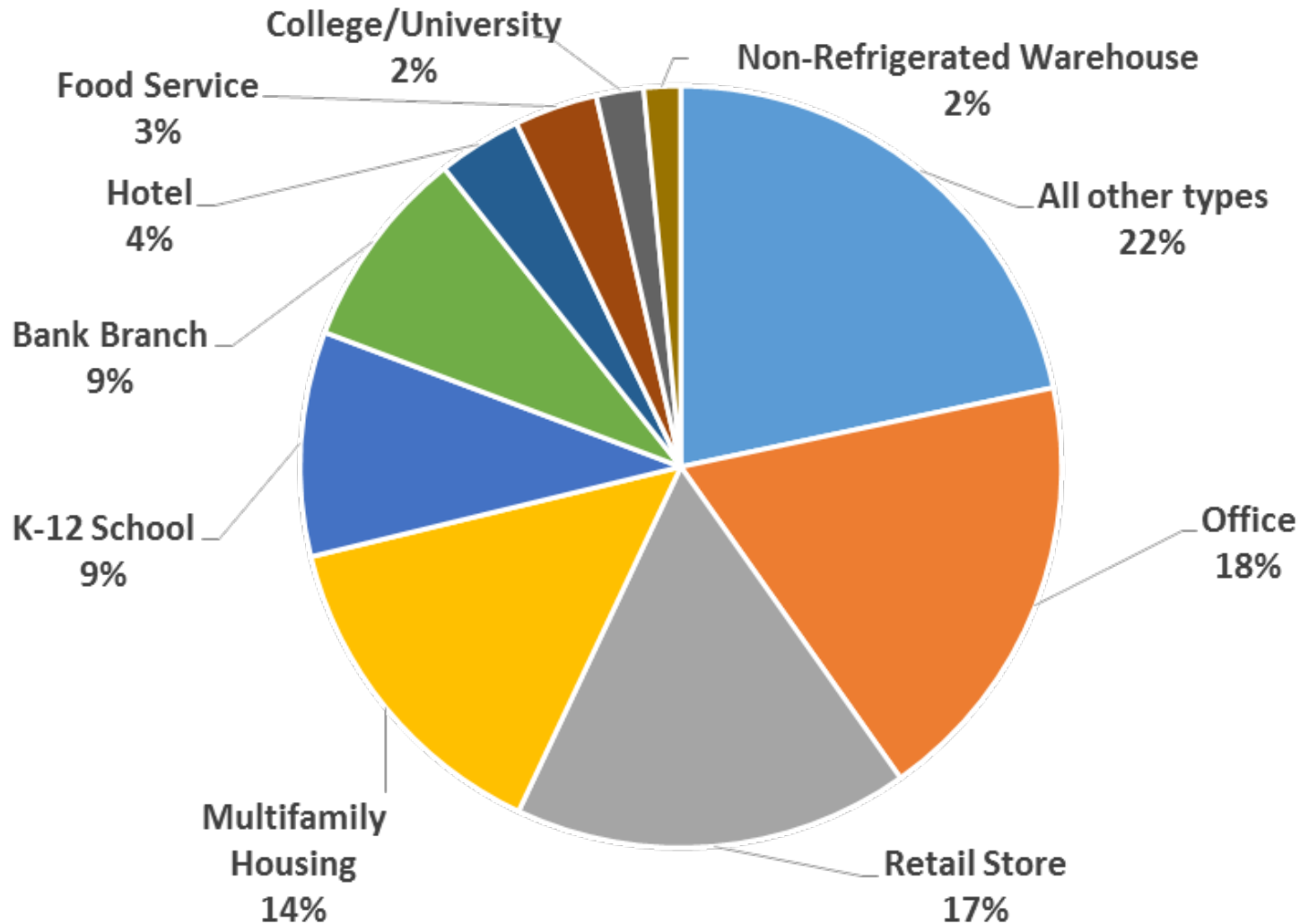


Why Multifamily?



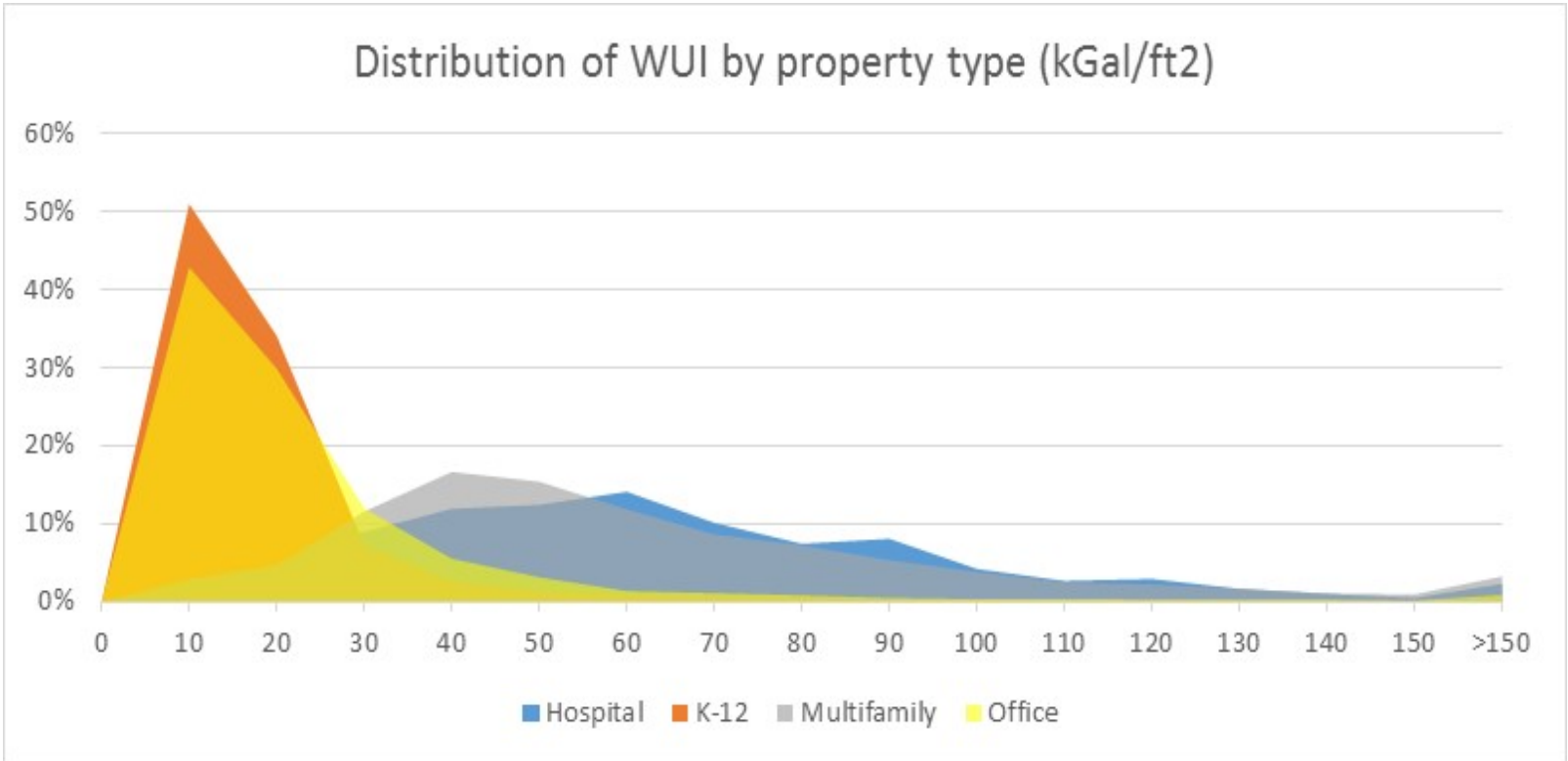
- **Comparatively intense users of water**
 - Portfolio Manager trends indicate that multifamily housing is among the most intense users of waters of all sectors (behind only food service, hotels, senior care facilities, and hospitals)
- **Presence in the national building stock**
 - More 33.1 million residences in the U.S. are located in multifamily buildings, roughly 25% of all housing the country
 - Distributed throughout the country
- **Availability of data**
 - Fannie Mae Multifamily Energy and Water Market Research Survey
- **Willingness of partners to participate**
 - Industry and utility partners have shown a tremendous amount of interest

18,000 Multifamily Properties Are Tracking Water With Portfolio Manager





Variability in Multifamily Properties

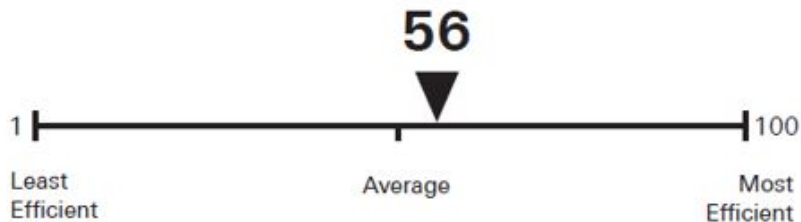


EPA's 1-100 Water Score for Multifamily Buildings

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What's similar to
ENERGY STAR score
approach?

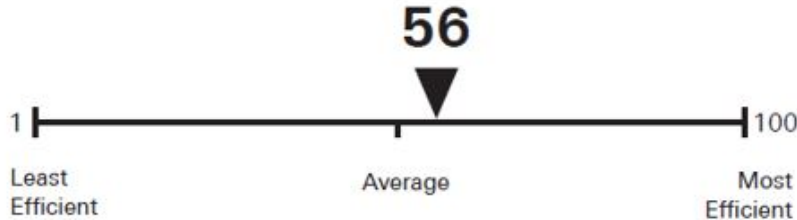


- Available for existing multifamily buildings with 20 or more units
- Approach consistent with the ENERGY STAR Score
 - Statistical evaluation of measured whole building resource (water) use
 - Normalize for weather and operation
 - Provide a meaningful peer comparison
 - Drive reductions in resource (water) use

EPA's 1-100 Water Score for Multifamily Buildings



What's different from ENERGY STAR score approach ?



- Inputs Adjusted Appropriately for Water
 - Include all water use (indoor and outdoor)
 - Focus on water intensity:
 - Total water use divided by building square foot
 - Assess normalization factors in the context of water
 - Operation is assessed with an understanding of water use
 - Climate terms capture outdoor water needs
 - Irrigated Area is important factor (capped at a 1:1 ratio with floor area)
- No EPA certification based on the Water Score



How the score works – Example 1



Variables	Multifamily A	Multifamily B
Size	150,000	150,000
Number of Units	220	200
Number of Bedrooms	280	200
Irrigated Area	300	300
Climate	Wet & Cool	Wet & Cool
Expected WUI (gal/ft ²)	61	48
Actual WUI (gal/ft ²)	56	56
EPA Water Score	50	29

How the score works – Example 1



What is the Same?

- Size
- Climate
- Irrigated area
- Water Use**

What is Different?

- Number of Units
- Number of Bedrooms
- Score**

Variables	Multifamily A	Multifamily B
Size	150,000	150,000
Number of Units	220	200
Number of Bedrooms	280	200
Irrigated Area	300	300
Climate	Wet & Cool	Wet & Cool
Expected WUI (gal/ft ²)	61	48
Actual WUI (gal/ft ²)	56	56
EPA Water Score	50	29
Gal/unit	38k	42k

Why?  Multifamily A is expected to use more water due to

- Higher unit density
- More bedrooms per unit



How the score works – Example 2

Variables	Multifamily A	Multifamily B
Size	150,000	150,000
Number of Units	220	220
Number of Bedrooms	280	280
Irrigated Area	50,000	300
Climate	Dry & Hot	Wet & Cool
Expected WUI (gal/ft ²)	82	61
Actual WUI (gal/ft ²)	56	56
EPA Water Score	74	50



How the score works

– Example 2

What is the Same?

- Size
- Number of Units
- Number of Bedrooms
- Water Use**

What is Different?

- Climate
- Irrigated Area
- Score**

Variables	Multifamily A	Multifamily B
Size	150,000	150,000
Number of Units	220	220
Number of Bedrooms	280	280
Irrigated Area	50,000	300
Climate	Dry & Hot	Wet & Cool
Expected WUI (gal/ft ²)	82	61
Actual WUI (gal/ft ²)	56	56
EPA Water Score	74	50
Gal/unit	38k	38k

Why?



Multifamily A is expected to use more water due to

- Climate
- Irrigated Area



What Do You Need to get the Score?



- Required inputs for a buildings of 20 units or more:
 - 12 months of water use
 - Building location
 - Building size
 - floor area
 - number of units
 - total number of bedrooms
 - Irrigated area
 - Critical field that many people need to add before a score will be calculated

What is Irrigated Area?

- Outdoor water use can represent a significant portion of a multifamily property's overall water use - the irrigated area of a property is the outdoor vegetated area that is regularly supplied water
- Note - in the water score, this value is capped at a one to one ratio with floor space

Include

- Areas irrigated with in-ground or automatic irrigation system
- Areas regularly watered by hand

Maybe

- Areas landscaped to require no supplemental water (e.g. xeriscaped)

Exclude

- Patios
- Decks
- Driveways
- Parking lots
- Other hardscapes

How Do I Determine Irrigated Area?



- Review existing designs and installation/service contracts
 - The size of the landscape will often be written into a service contract for maintaining landscape or included in the original design
- Deduct the footprint of the building and hardscape (pavements and parking area) from the total property area
 - Lot size is commonly available from tax records and municipal/county records may also include building footprint
- Use an online mapping tool
 - One free example: www.freemaptools.com/area-calculator.htm

Add Irrigated Area




MyPortfolio [Sharing](#) [Reporting](#) [Recognition](#)

Water Score MF

1000 Overbrook Rd, Silver Lake, OH 44224 | [Map It](#)
Portfolio Manager Property ID: 16497084
Year Built: 2014

[Edit](#)

 Not eligible to apply for ENERGY STAR Certification

Weather-Normalized Source EUI (kBtu/ft²) Why not score?

Current EUI: 235.4
(0.1% better than median.)

Baseline EUI: 227.2
(3.6% better than median.)

[Summary](#) [Details](#) [Energy](#) [Water](#) [Waste & Materials](#) [Goals](#) [Design](#)

Basic Information


Construction Status:
Existing property that is one single building

Property GFA - Self-Reported:
20,000 Sq. Ft.

Occupancy:
100%

[Edit](#)

Property Uses and Use Details

 [View as Diagram](#)

Add Another Type of Use [Add](#)

Name	Property Use Type	Gross Floor Area	Action
▶ Building Use	Multifamily Housing	20,000 ft ²	I want to... <input type="text"/>
Property GFA (Buildings):		20,000	(used to calculate EUI)
Property GFA (Parking):		0	

Add Irrigated Area con't

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Construction Status: * Existing
 Design
 Test

Year Built: * 2014

Gross Floor Area: * 20,000 Sq. Ft. ▾

Gross Floor Area (GFA) is the total property floor area, measured from the outside surface of the exterior walls of the building(s). Do not including parking. [Details on what to include.](#)

Irrigated Area: Sq. Ft. ▾

Occupancy: * 100 ▾ %

Additional Information

Is this property's data maintained by a Service and Product Provider? No
 Yes

Is this a Federal Property (owned by any country?) No
 Yes

Update Property

[Cancel](#)

Enter Water Meters and Consumption Data



Manage Bills (Meter Entries) for [Water Score MF](#)

Meter Selection: Potable: Mixed Indoor/Outdoor Me... ▾

Basic Meter Information

Monthly Entries

	Start Date	End Date	Usage Gallons	Total Cost (\$)	Estimation
<input type="checkbox"/>	1/1/2016	1/31/2016	50,000	5,700.00	<input type="checkbox"/>
<input type="checkbox"/>	2/1/2016	2/29/2016	50,000	40,900.00	<input type="checkbox"/>
<input type="checkbox"/>	3/1/2016	3/31/2016	50,000	5,030.00	<input type="checkbox"/>
<input type="checkbox"/>	4/1/2016	4/30/2016	50,000	5,034.00	<input type="checkbox"/>
<input type="checkbox"/>	5/1/2016	5/31/2016	50,123	4,569.00	<input type="checkbox"/>
<input type="checkbox"/>	6/1/2016	6/30/2016	50,231	4,600.00	<input type="checkbox"/>
<input type="checkbox"/>	7/1/2016	7/31/2016	50,412	4,599.00	<input type="checkbox"/>
<input type="checkbox"/>	8/1/2016	8/31/2016	50,252	4,700.00	<input type="checkbox"/>

New Water Metric Display

look for



MyPortfolio

Sharing

Reporting

Recognition

Water Score MF

1000 Overbrook Rd, Silver Lake, OH 44224 | [Map It](#)

Portfolio Manager Property ID: 16497084

Year Built: 2014

[Edit](#)



Not eligible to apply for
ENERGY STAR
Certification

**Weather-Normalized
Source EUI (kBtu/ft²)**

[Why not
score?](#)

Current EUI: 235.4
(0.1% better than median.)

Baseline EUI: 227.2
(3.6% better than median.)

Summary

Details

Energy

Water

Waste & Materials

Goals

Design

Water Score (1-100)

Current Score: 74

Baseline Score: 74

Meter Summary

1 Water Meters Total

Water Use by Calendar Month



New Water Metric Display

No Irrigated Area Entered

look for



Summary Details Energy Water Waste & M

Water Score (1-100)

Current Score: N/A

Baseline Score: N/A

Meter Summary

1 Water Meters Total

1 - Used to Compute Metrics

[Add A Meter](#)

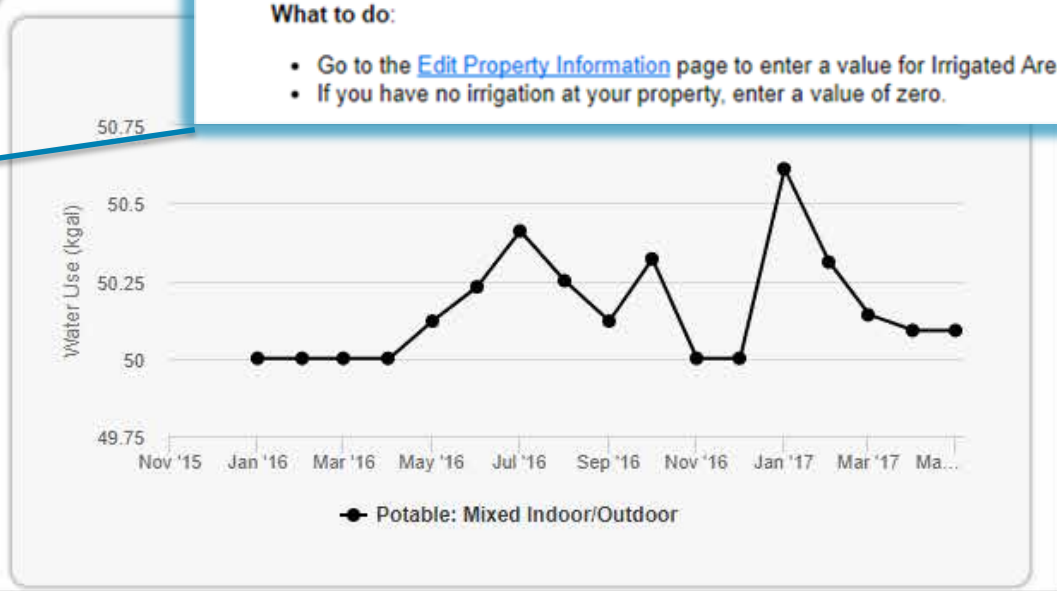
This metric cannot be calculated.

1) There is no value for Irrigated Area

Problem: The water score is not available when there is no value entered for the irrigated area.

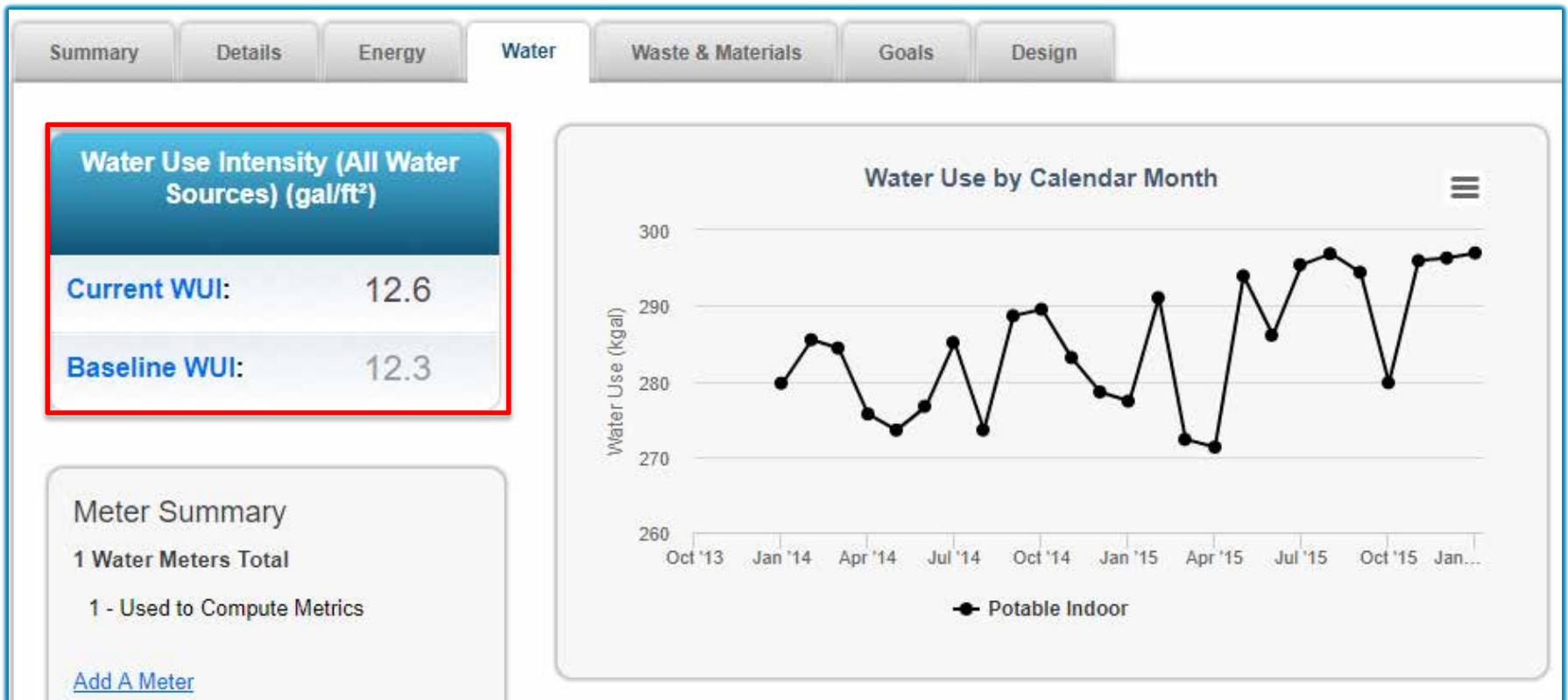
What to do:

- Go to the [Edit Property Information](#) page to enter a value for Irrigated Area.
- If you have no irrigation at your property, enter a value of zero.



New Water Metric Display *Not Eligible for the Water Score*

look for



Water Score is Available in the New "Dashboard" Feature

look for



Welcome Leslie Staging: [Account Settings](#) | [Notifications](#) | [Contacts](#) | [Help](#) | [Sign Out](#)

MyPortfolio

Sharing

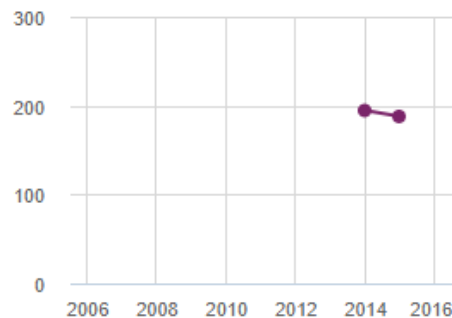
Reporting

Recognition

Properties (14)

Add a Property

Source EUI Trend (kBtu/ft²)



Manage Portfolio

Dashboard (Metrics current as of 09/21/2017 03:50 PM EDT)

Search by ID or Name

View All Properties (14) ▾

Water Score ▾

Refresh Metrics

[Add/Edit/Delete Groups](#)

[Add/Edit/Delete Views](#)

Name ▾	Water Current Date ↕	Water Score (Multifamily Only) ↕	Water Intensity (All Water Sources) (gal/ft ²) ↕	Total Water Cost (All Water Sources) (\$) ↕
Hilltop Central Office 16497080	01/31/2016	NA	12.62	520541.06
Hilltop Estate 16497099	05/31/2017	79	60.26	16379.00
Hilltop Gardens 16497100	05/31/2017	26	120.52	43379.00
Hilltop Towers 16497084	05/31/2017	74	30.13	19179.00
Hilltop Village 16497101	05/31/2017	61	80.34	37379.00



Water Score is Available in Custom Reports

MyPortfolio

Sharing

Reporting

Recognition

View Report: Water Score

Date Generated: 09/21/2017 03:56 PM EDT

Number of properties in report: 4

The following displays the data generated from your [report template](#). It includes the information and metrics that you selected for the properties you included. You may "Generate a New Report" to get updated information from the action menu for this report template.

Information and Metrics

Information and Metrics

4 records

Property Id	Property Name	Year Ending	Water Score (Multifamily Only)	Water Intensity (All Water Sources) (gal/ft ²)	Water Use (All Water Sources) (kgal)	Total Water Cost (All Sources) (\$)
16497080	Hilltop Central Office	01/31/2016	Not Available	12.62	3470.3	520541.06
16497099	Hilltop Estate	05/31/2017	79	60.26	602.6	16379
16497100	Hilltop Gardens	05/31/2017	26	120.52	602.6	43379
16497101	Hilltop Village	05/31/2017	61	80.34	602.6	37379



WATER SCORECARD

56

out of 100

Uptown Lofts

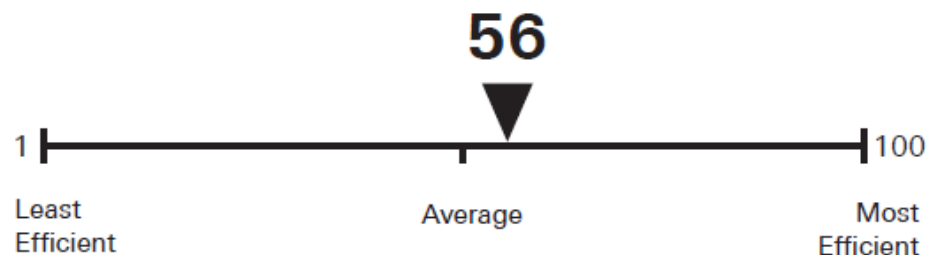
Primary Function: Multifamily
Gross Floor Area (ft²): 14,800
Built: 1960

Property Address:
123 Main Street
Anytown, CA 12345

For Year Ending: April 30, 2015

Date Generated: June 30, 2017

For the year ending May 2017, this building used 198 gallons of water per square foot. Here's how that compares to similar buildings nationwide:



About this Score

The U.S. Environmental Protection Agency's (EPA) Water Score is generated by the ENERGY STAR® Portfolio Manager® tool and supported by WaterSense. The Score offers a 1 - 100 measurement of how efficiently this property uses water, compared to similar properties nationwide, when normalized for climate and operational characteristics. Learn more at www.epa.gov/WaterSense.



Supported by EPA's
WaterSense program



This scorecard was generated from EPA's
ENERGY STAR Portfolio Manager tool.

VERIFICATION (Optional)

I, _____, verify that the information regarding water use and property use details is true and correct to the best of my knowledge.

Signature _____

Date _____

Extra Help

- **Understanding Portfolio Manager and the Water Score**
 - Access Portfolio Manager: www.energystar.gov/benchmarking
 - EPA’s Portfolio Manager Help Center: <https://portfoliomanager.energystar.gov/pm/help>
 - EPA’s Water Score technical reference guide
 - ENERGY STAR Water Score FAQs
- **Assessing and Improving Water Use**

Available at www.epa.gov/watersense/water-score-multifamily-housing

 - WaterSense’s new Multifamily Assessment Tool
 - WaterSense’s new Reference Guides for water management in multifamily buildings



Questions?



Contact

Jonah Schein

schein.jonah@epa.gov

Questions?

E-mail: watersense@epa.gov

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

