

U.S. Water Use Intensity by Property Type

Technical Reference

OVERVIEW

This reference table is jointly prepared by the U.S. Environmental Protection Agency's (EPA's) ENERGY STAR and [WaterSense® programs](#). It is designed to allow you to compare your property's water use to the median (or mid-point) and range of Water Use Intensity (WUI) of similar properties.

Benchmarking Your Property

When benchmarking in Portfolio Manager, we recommend that you focus on the primary function (or, main activity) in your building(s). Begin by selecting your primary function from the table below and then enter as few additional use types as possible. Benchmarking your building using a single use type will most closely approximate how your building would have been recorded in the reference data survey, and therefore yield the most accurate comparisons to median performance. In some cases, buildings may have multiple distinctly different uses. For example, an office and a hotel that share a common building. In these mixed-use settings, it is appropriate to enter multiple use types. Definitions of all property types are available at: www.energystar.gov/PMGlossary.

Using WUI Reference Data

The **WUI reference data** presented in the table on the next page is presented to assist in benchmarking of a property's water use intensity compared to similar properties throughout the United States. The median (50th percentile) value is the middle of the national population—half of buildings use more water, half use less. Water use is a highly variable phenomenon, and averages are often highly influenced by a small number of high intensity observations. A median WUI value works better than the mean (arithmetic average) for comparing relative performance because it more accurately reflects the mid-point of water use for most property types. In addition, due to this high level of variability, the 5th, 25th, 75th, and 95th percentile values have been provided so that the range can be observed between different property types. Where possible, median values for property-type-specific metrics (operating characteristics specific to each property type) that can help explain variability have also been included.

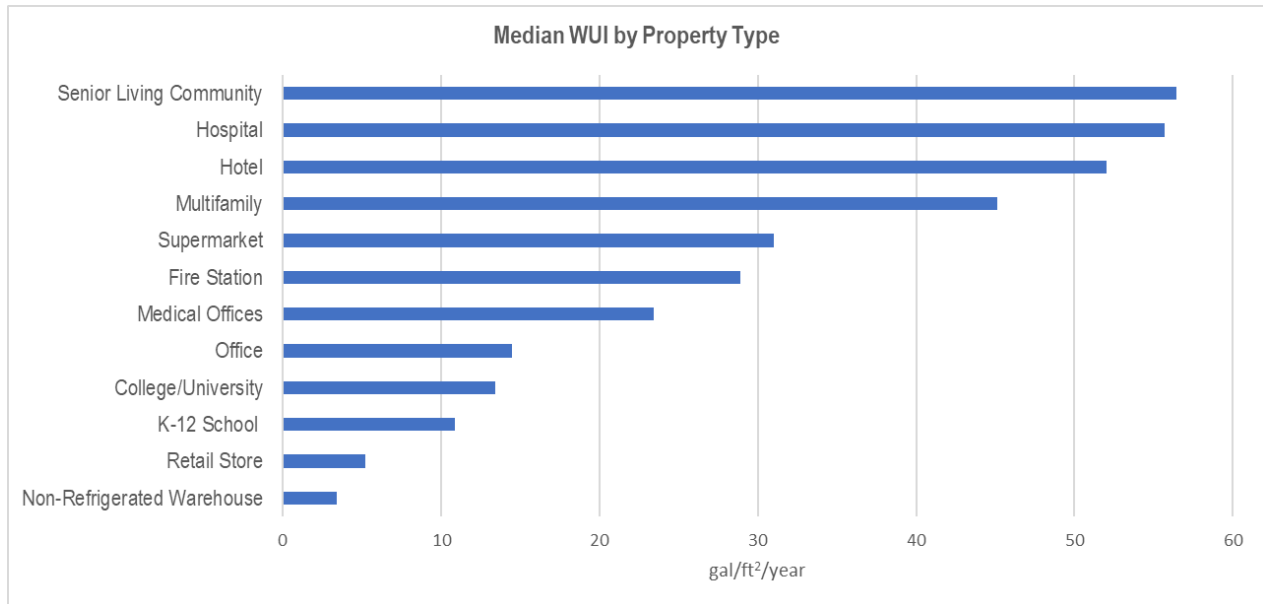
EPA will evaluate data again in the future and work to add property types to this document as more data becomes available in Portfolio Manager. In addition, EPA offers the 1-100 EPA Water Score for multifamily properties. The score evaluates a multifamily building relative to its peers, similar to ENERGY STAR scores, and also adjusts for climate and business activity. You can learn more about the score at:

www.energystar.gov/buildings/resources_audience/multifamily_housing/water_score. EPA will also continue to evaluate the possibility of adding Water Scores as data becomes available to support this.

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Median WUI by Property Type

The median WUI for each property type is illustrated in the graph below. Additional information can be found in the table at the end of this document.



Understanding the Reference Data

The ENERGY STAR program has been able to provide similar [Energy Use Intensity \(EUI\) data by property type](#) primarily using data from the U.S. Energy Information Administration’s Commercial Building Energy Consumption Survey (CBECS). Since no comparable data source exists for water use in buildings, ENERGY STAR and WaterSense prepared this document using information entered by users in the ENERGY STAR Portfolio Manager benchmarking tool for calendar year 2019 (except for multifamily buildings, which use a different data source).

The data in ENERGY STAR Portfolio Manager is entered by individual account holders voluntarily or, in some cases, as required by a local or state law. None of the water benchmarking data entered into Portfolio Manager by users is verified by EPA. As a result, while efforts have been taken to eliminate clearly erroneous data, property types that are highly skewed in terms of climate/geographic region, and property types that lack a diversity of operators, the data should not be interpreted as being statistically representative.

U.S. National Water Use Intensity (WUI) Reference Values for Select Portfolio Manager Property Types

Portfolio Manager Property Type	Number of Observations	WUI (gal/ft ² /year) Percentile					Median Property Type-Specific Metrics
		5th	25th	50 th /Median	75th	95th	
College/University	590	2.48	6.20	13.40	28.34	66.92	N/A
Fire Station	126	5.00	13.95	28.90	54.29	162.95	N/A
Hospital (General Medical & Surgical)	347	14.30	38.28	55.71	77.44	151.18	107,000 Gal/hospital bed/year
Hotel	1,488	23.94	40.06	52.02	69.28	120.23	33,500 Gal/guest room/year
K-12 School (includes Pre-school/Daycare)	1,588	3.04	6.88	10.84	19.71	55.69	11,200 Gal/worker/year
Medical Offices (includes Urgent Care/Clinic/Other Outpatient)	1,177	5.73	12.86	23.40	38.82	84.71	N/A
Multifamily*	258	16.76	31.71	45.15	65.56	126.14	43,600 Gal/unit/year
Non-Refrigerated Warehouse (includes Self-Storage Facility and Distribution Center)	1,675	1.15	1.84	3.43	6.69	20.88	N/A
Office (includes Bank Branch/Financial Office/Other Offices)	9,627	2.93	7.83	14.48	29.41	81.52	6,020 Gal/worker/year
Retail Store	4,382	1.41	2.84	5.24	8.99	28.59	N/A
Senior Living Community	1,232	22.18	39.80	56.41	77.69	129.26	39,800 Gal/resident/year
Supermarket (includes Grocery Store, Wholesale Club and Supercenter)	432	9.65	21.03	31.00	45.58	78.42	N/A

* Data Source: 2012 Fannie Mae Energy and Water Market Research Survey (<https://multifamily.fanniemae.com/media/6656/display>)