



# Dive into water and waste savings strategies from BOMA's W2 Challenge Champions

November 9, 2021

ENERGY STAR Learn From the Best  
Webinar Series



# Partner of the Year Award

- ✓ Excellence in Energy Management
  - Robust energy management practices & program
  - Address all areas of the ENERGY STAR Guidelines for Energy Management
  - Help define best practices
- ✓ Leverage ENERGY STAR tools
- ✓ Excellent internal & external communications
- ✓ Active in the Partner community
- ✓ Strong energy performance
- ✓ Awarded annually



[Energystar.gov/awards](https://energystar.gov/awards)

***Applications are  
now open and due  
on December 7<sup>th</sup>!***

# Today's webinar

- Features two ENERGY STAR Partners that were champions of BOMA's W2 Challenge. They will be sharing examples of how they reduced water and waste in commercial buildings, including in data centers, offices, multifamily properties, and retail.
- The W2 Challenge was a two-year program designed to encourage buildings to benchmark water usage and waste output and implement best practices to improve performance. Participants committed to enter water and/or waste data at least quarterly in ENERGY STAR Portfolio Manager® over the 2018 and 2019 calendar years. Nearly 2,000 buildings from more than 400 cities across the US participated.

# Today's Speakers



- **Madeline O'Donnell**, ESG and Operations Analyst, Principal Real Estate Investors



- **Sormeh McCullough**, Senior Manager, ESG, Digital Realty



# Dive into Water and Waste Savings Strategies from BOMA's W2 Challenge Champions

**Madeline O'Donnell | ESG & Operations Analyst**

November 9, 2021





# Contents

Involvement in the W2 Challenge

Strategies for Success

1. Property Manager Training & Partnership
2. Data Collection & Analysis
3. Property Engagement

Implementation Case Studies

---

# Principal Real Estate's ENERGY STAR history

## Initiation

Data collection and energy efficiency

2008 to 2013

- **Begin** collection and benchmarking of energy data for office properties
- **Become** ENERGY STAR Partner

## Formalization

Defining the foundations of PRPI

2013 to 2017

- **Expand** data collection and benchmarking to include multifamily & retail
- **Establish** utility targets
- **Track and report** results
- **Pilot and operationalize** targeted programs

## Integration

Embedding ESG across the organization

2017 to 2020

- **Expand** data collection to include industrial
- **Join** W2 Challenge to drive water and waste performance

# Pillars of Responsible Property Investing (PRPI) initiative

Delivering positive financial results and environmental, social, and governance (ESG) outcomes through best-in class asset management and fiduciary governance.

Three specific pillars guide our investment approach:



## Market resilience

Reinforcing the social and economic vitality in markets where we do business through:

- Equitable contracting
- Community investment
- Healthy and productive buildings



## Corporate governance

Managing risk and meeting investor objectives through:

- Integrity
- Transparency
- Managerial oversight



## Property performance

Delivering enhanced financial and environmental performance through:

- Benchmarking energy, water, and waste
- Operational best practices
- Stakeholder engagement

# Why participate in the W2 challenge

Extension of Principal's ESG initiatives

- Built on PRPI initiative
- Engage property managers and tenants:
  - Benchmarking in ESPM
  - Monitoring usage
  - Sharing best practices to save water and waste
  - Recognizing achievements
- 178 buildings participated
- Retail, office and multifamily

# Strategies for Success: Property Manager Training and Partnership

## ONGOING

Standard onboarding procedure for new properties and property managers

## MONTHLY

Property managers enter utility data in ENERGY STAR® Portfolio Manager

## QUARTERLY

Quality control to check for data irregularities; notify Property Managers as needed.

## ANNUALLY

Property Manager training with updates on new procedures and expectations



# Strategies for Success: Data Collection & Analysis

## ESPM Benchmarking: Water



### Five Ways to Enter Bill Data

1. Manual ([Instructions here](#))
2. Use our [simple spreadsheet](#) (on the bottom of each meter's Manage Bills page) to upload or Copy/Paste
3. Use our [complex spreadsheet](#) (multiple meters + multiple properties)
4. [Hire an organization](#) to electronically enter your data
5. See if your [utility offers this service](#)

Your Property is: [Edit](#)

- A Single Building
- Part of a Building
- A Campus of Multiple Buildings

You Are Tracking: [Edit](#)

- Total water consumption for your property
- Partial water consumption for your property

Name Meter ID	Water Meter Type	Most Recent Bill Date	In Use? (Inactive Date)
<a href="#">81664531 – POTABLE COMMERCIAL WATER (3349)</a> 38815875	Potable: Mixed Indoor/Outdoor	10/14/2021	Yes
<a href="#">60807790 - RECLAIMED IRRIG</a> 12361966	Reclaimed Outdoor	10/13/2021	Yes
<a href="#">68828310 - POTABLE COMMERCIAL WATER (3351)</a> 5926946	Potable Indoor	10/13/2021	Yes
<a href="#">79678084 – POTABLE COMMERCIAL WATER (3353 All-3355 E)</a> 25624662	Potable Indoor	10/13/2021	Yes
<a href="#">79678085 – POTABLE COMMERCIAL WATER (3355 W-Part Cncrs)</a> 25624659	Potable Indoor	10/13/2021	Yes

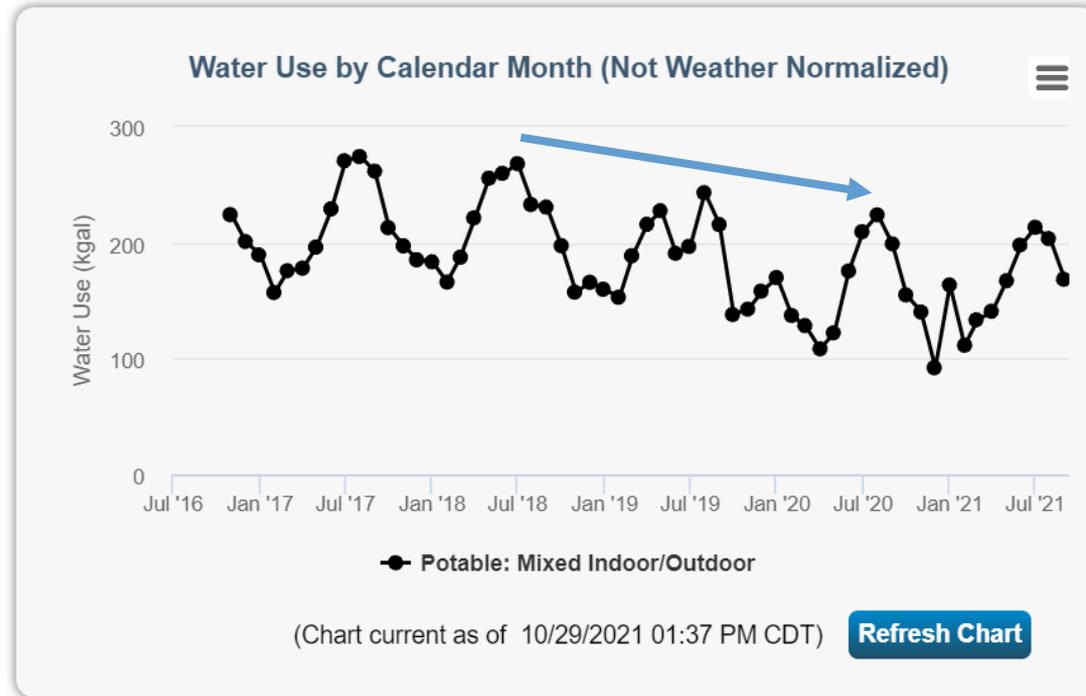
# Strategies for Success: Data Collection & Analysis

## ESPM Benchmarking: Waste

Name Meter ID	Waste Meter Type	Frequency	Most Recent Date
<a href="#">Composted- Compostable - Mixed/Other</a> 22572220	Composted - Compostable - Mixed/Other	Regularly	11/30/2021
<a href="#">Disposed- Trash</a> 22558639	Disposed - Trash	Regularly	10/31/2021
<a href="#">Recycled- Mixed Recyclables</a> 22567722	Recycled - Mixed Recyclables	Regularly	10/31/2021
<a href="#">Recycled- Mixed Recyclables</a> 22556685	Recycled - Mixed Recyclables	4 Events	08/01/2020
<a href="#">Disposed- Trash</a> 22505829	Disposed - Trash	2 Events	08/01/2017

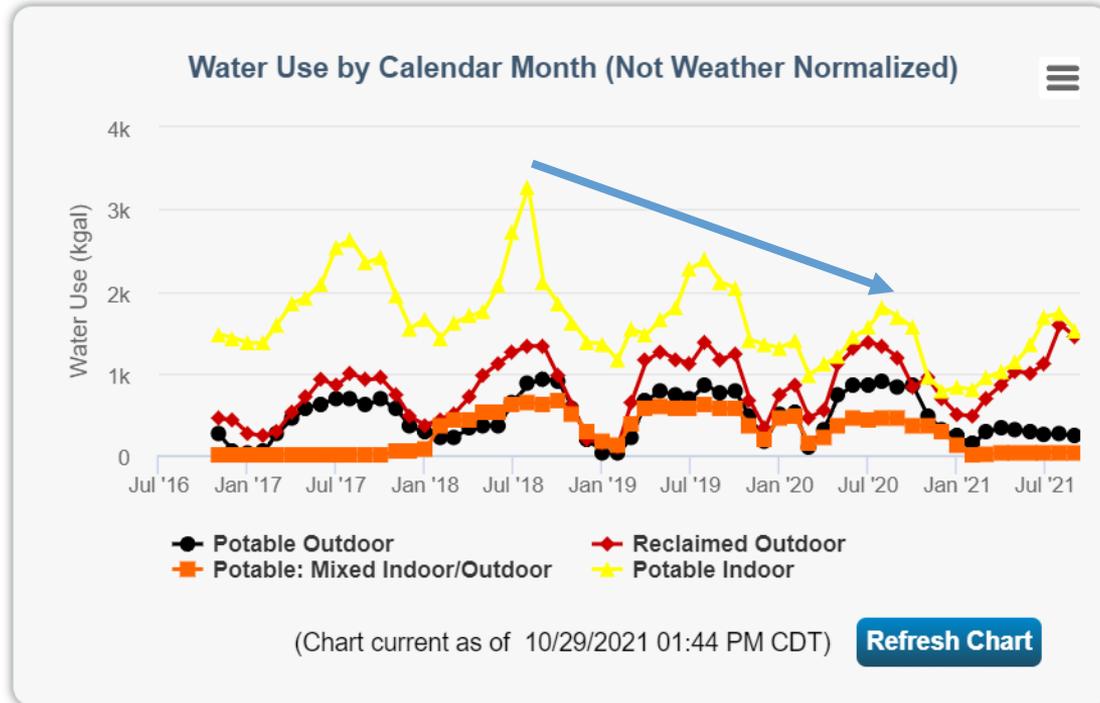
# Strategies for Success: Data Collection & Analysis

## ESPM Analysis: Water



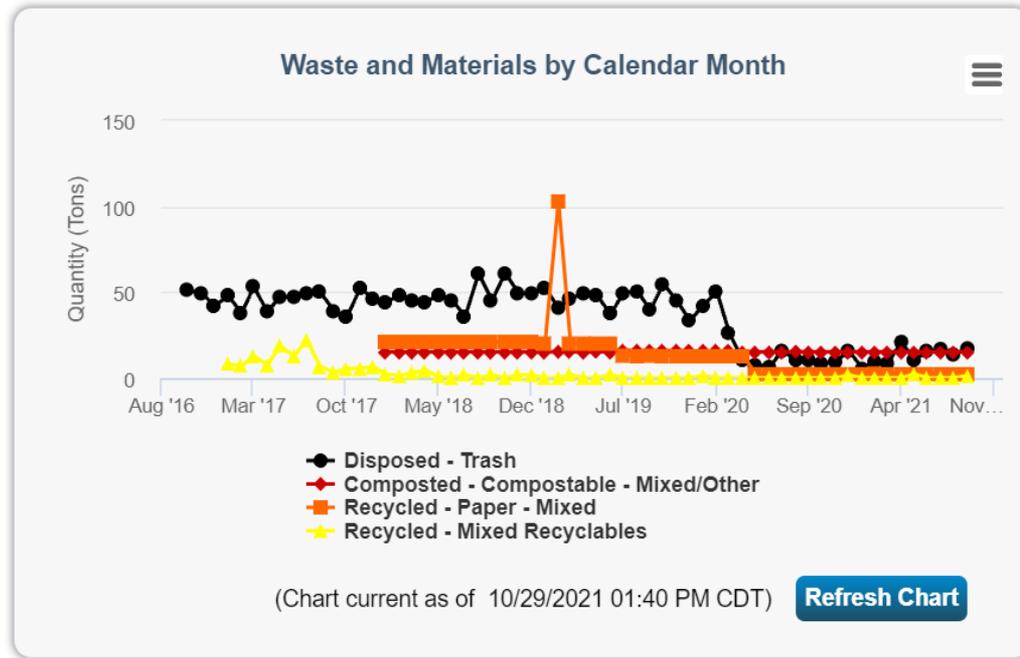
# Strategies for Success: Data Collection & Analysis

## ESPM Analysis: Water



# Strategies for Success: Data Collection & Analysis

## ESPM Analysis: Waste



# Strategies for Success: Property Engagement

## Tips on reducing water use impacts

### **BOMA W2 Challenge tip of the month: consider alternative water sources**

As you may know, Principal Real Estate Investors is participating in the BOMA Water and Waste (W2) 2018 challenge. As part of this initiative, we are sharing BOMA W2's tip of the month for reducing water use impacts:

#### **Research options for sourcing your existing water supply from alternative water sources.**

Facilities can take advantage of onsite opportunities by capturing, treating, and utilizing the water in another application. Potential onsite alternative sources include:

- **Rainwater/stormwater**
- **Foundation drain water**
- **Treated gray water**
- **Air handling condensate**
- **Reverse osmosis and nanofiltration reject water**
- **Cooling tower blowdown**
- **Purified water system**

Potential uses of onsite alternative sources include **irrigation, cooling tower make-up water, toilet flushing, make-up water for decorative ponds, fountains, and waterfalls, and fume hood scrubbers.**



# Strategies for Success: Property Engagement

Adopting efficient recycling and composting programs can have a significant impact in reducing hauling costs

## BOMA W2 Challenge tip of the month: analyze your building's waste generation and research recycling options

Here is the September tip from the BOMA W2 Challenge: Understanding waste generation at your property and adopting efficient recycling and composting programs can have a significant impact in reducing hauling costs.

- Contact your waste hauler to **understand exactly which materials are accepted** in their recycling services.
- Identify what can be recycled starting with the materials that make up the **largest portion of your property's waste stream**.
- **Expand recycling collection** beyond paper; consider adding cardboard, plastics, and glass.
- **Identify unique waste streams and ensure these materials are separately sorted** and properly recycled. Items may include lightbulbs, pallets, electronic waste, batteries, and plastic bags.
- **Consider local donation programs** for unconsumed food from a cafeteria or kitchenettes.

Key resources: Waste Management's [6 Steps to Better Business Recycling](#) suggests the first few steps to undertake in tackling a recycling program. [Earth911](#) offers a comprehensive "How to Recycle" guide that provides consumers and businesses with information on hundreds of different materials. Additionally, the U.S. Composting Council offers [A Guide to Workplace Composting](#).



# Strategies for Success: Property Engagement

Webinars and resources for achieving water savings

## BOMA W2 “Every Drop Counts” webinar

If you missed BOMA W2’s **“Every Drop Counts: Water Efficiency Solutions for Your Property” webinar**, don’t worry the recording will be up soon! Russ Homer, the President of Water Management Inc., and Jason McIntyre, Director of Real Estate Operations and Sustainability at USAA Real Estate, discussed the latest water management trends and how to achieve significant water savings at your property through a variety of low-cost solutions.

This webinar is one of many in the W2 Challenge series, which will continue into 2019 in order to help provide building owners and managers with the insights needed to improve water and waste performance at their property. Learn more [here](#).



# Strategies for Success: Property Engagement

## Tune up your irrigation system

### BOMA W2 Challenge tip of the month: tune up your irrigation system

As you may know, Principal Real Estate Investors is participating in the BOMA Water and Waste (W2) 2018 challenge. As part of this initiative, we are sharing BOMA W2's tip of the month – tune up your irrigation system. Please review the best practices below and implement feasible items at your property:

- **Inspect your irrigation system(s)** and check for leaks and broken or clogged sprinkler heads.
- Consider asking janitorial, parking, engineering, and security teams to be on the **lookout for pooled water and leaks.**
- If possible, update to a **weather-based irrigation controller** than can adjust its watering schedule according to seasonal weather conditions.
- Implement a **landscape-specific cycle** and soak schedule to account for differences in soil type and slopes.
- Schedule your irrigation system to **account for the types of plants and sun exposure** in each area.
- Install a **micro-irrigation system** for appropriate gardens, trees, and shrubs.



# Strategies for Success: Property Engagement

Make recycling easy, convenient, and fun

## BOMA W2 Challenge tip of the month: make recycling easy, convenient, and fun

As you may know, Principal Real Estate Investors is participating in the BOMA Water and Waste (W2) 2018 challenge. As part of this initiative, we are sharing BOMA W2's tip of the month – make recycling easy, convenient, and fun. Please review the best practices below and implement feasible items at your property:

- **Install more recycling receptacles** across your property, and make sure they're **properly labelled** and distinguishable from other receptacles (mixed recycling, compost, landfill).
- Encourage recycling by **removing deskside trash bins** and **replacing them with deskside recycling bins**, so that occupants can throw away trash only in common areas.
- Create a **waste management team** and recruit representatives from different areas of your organization.
- Increase awareness by **educating staff** on proper waste disposal processes and the importance of recycling and composting:
  - Hold regular **refresher meetings** to ensure recycling and composting practices become routine procedure and discuss any changes that have been made to waste management programs;
  - **Post fact sheets and informational posters** in kitchenettes and common areas;
  - **Send staff-wide emails, newsletters, or other announcements** discussing waste management programs and processes.
- Motivate employees to participate by **creating competitions and implementing incentives**.



# Property implementation: Hardin House



Staff training from  
waste management



Move-in meeting –  
recycling and  
composting



Instructions for  
recycling, compost,  
and landfill



Compost collection  
bins for paper  
towels



Compostable  
garbage bags



West Campus Move-  
Out Initiative

# Property implementation: Green Firs Towne Center



Landscape  
renovation with  
water management



Inspection and  
winterization of  
irrigation systems



Recycling and e-  
waste throughout  
common areas



Maximize container  
removal efficiency



Proactive waste  
volume monitoring



Tenant  
engagement

## Property Implementation: Park Place



Replace all manual  
faucets, toilets, and  
soap dispensers



Filters on cooling  
tower to reduce water  
deposits



Battery and toner  
recycling stations on  
campus



Bi-annual e-cycle  
events



Organics recycling  
program



E-newsletter for  
tenant engagement

Read the Park Place Sustainability profile at:

<https://www.principalglobal.com/principal-real-estate-investors/knowledge/insights/sustainability-profiles>

# Success and next steps

From 2010 to 2020 we accomplished:

## 12.8%

**water use reduction**  
*exceeding our 10% goal*

## 16.3%

**waste diversion**  
*exceeding our 10% goal*

Success in water and waste savings led by:



Property manager training & partnership



Data collection & analysis



Property engagement

## Future:

- Setting more aggressive utility targets
- Replicate our success in water and waste savings

# Important information

Unless otherwise noted, the information in this document has been derived from sources believed to be accurate as of November 2021. Information derived from sources other than Principal Global Investors or its affiliates is believed to be reliable; however, we do not independently verify or guarantee its accuracy or validity. Past performance is not necessarily indicative of a guarantee of future performance and should not be relied upon to make an investment decision.

The information in this document contains general information only on investment matters. It does not take account of any investor's investment objectives, particular needs or financial situation and should not be construed as specific investment advice, an opinion or recommendation or be relied on in any way as a guarantee, promise, forecast or guarantee of future events regarding a particular investment or the markets in general. All expressions of opinion and predictions in this document are subject to change without notice. Any reference to a specific investment or security does not constitute a recommendation to buy, sell, or hold such investment or security, nor an indication that Principal Global Investors or its affiliates has recommended a specific security for any client account.

Except as otherwise limited by applicable law, Principal Financial Group, Inc., Its affiliates, and its officers, directors, employees, agents, disclaim any express or implied warranty of reliability or accuracy (including by reason of negligence) arising out of any for error or omission in this document or in the information or data provided in this document.

Any representations, example, or data not specifically attributed to a third party herein, has been calculated by, and can be attributed to Principal Global Investors. Principal Global Investors disclaims any and all express or implied warranties of reliability or accuracy arising out of any for error or omission attributable to any third party representation, example, or data provided herein.

All figures shown in this document are in U.S. dollars unless otherwise noted. All assets under management figures shown in this document are gross figures and may include leverage, unless otherwise noted. Assets under management may include model-only assets managed by the firm, where the firm has no control as to whether investment recommendations are accepted or the firm does not have trading authority over the assets.

This document is intended for use in:

- The United States by Principal Global Investors, LLC, which is regulated by the U.S. Securities and Exchange Commission.

© 2021 Principal Financial Services, Inc. Principal, Principal and the symbol design and Principal Financial Group are trademarks and service marks of Principal Financial Services, Inc., a member of the Principal Financial Group. Principal Global Investors leads global asset management at Principal®. Principal Real Estate Investors is a dedicated real estate investment management group within Principal Global Investors.



**Thank you!**

**Madeline O'Donnell | ESG & Operations Analyst**  
Principal Real Estate Investors  
[O'Donnell.Madeline@principal.com](mailto:O'Donnell.Madeline@principal.com)



# Dive into Water and Waste Savings Strategies

SORMEH MCCULLOUGH | SR. MANAGER, ESG

NOVEMBER 2021



DIGITAL REALTY

Digital Realty the trusted foundation | powering your digital ambitions



# DIGITAL REALTY

GLOBAL provider dedicated to the full customer spectrum from ENTERPRISE colocation to HYPERSCALE

4,000+

GLOBAL CUSTOMERS

290+

DATA CENTERS <sup>(1)</sup>

170,000+

CROSS-CONNECTS

INTERCONNECTIO  
N • COLOCATIO  
N • SCALE • HYPERSCALE

Selling GLOBALLY... Supporting LOCALLY

AMERICAS

**Ascenty**

A Digital Realty and Brookfield Infrastructure JV

EMEA

**interxion**<sup>™</sup>

A Digital Realty Company

APAC



**MC DIGITAL REALTY**

A Digital Realty and Mitsubishi Corporation JV

Note: Data as June 30, 2021, unless otherwise noted.

1) Includes unconsolidated joint venture and held-for-sale data centers. Excludes development assets that are not currently in the operating portfolio and does not reflect recently announced Mapletree transaction.

# Global Sustainability Leadership

## Environmental Responsibility Enhances our Business Strategy



### Renewable Energy

LEADING PURCHASER OF RENEWABLE ENERGY

- Global, science-based carbon reduction commitment (SBTi)
- 100% renewable energy for Europe and US colocation business
- 50% global renewable supply<sup>1</sup>



### Green Buildings

LEADING THE DATA CENTER INDUSTRY IN GREEN BUILDING CERTIFICATIONS

- 43% of Global Portfolio Green Building Certified<sup>1</sup>
- 61% of certifications gold level and above<sup>1</sup>



### Efficiency

MORE ENERGY STAR CERTIFICATIONS THAN ANY OTHER DATA CENTER PROVIDER

- 2020 and 2021 ENERGY STAR Partner of the Year Award recipient<sup>1</sup>
- 70% of U.S. portfolio ENERGY STAR-certified<sup>1</sup>
- BOMA W2 Challenge Participant



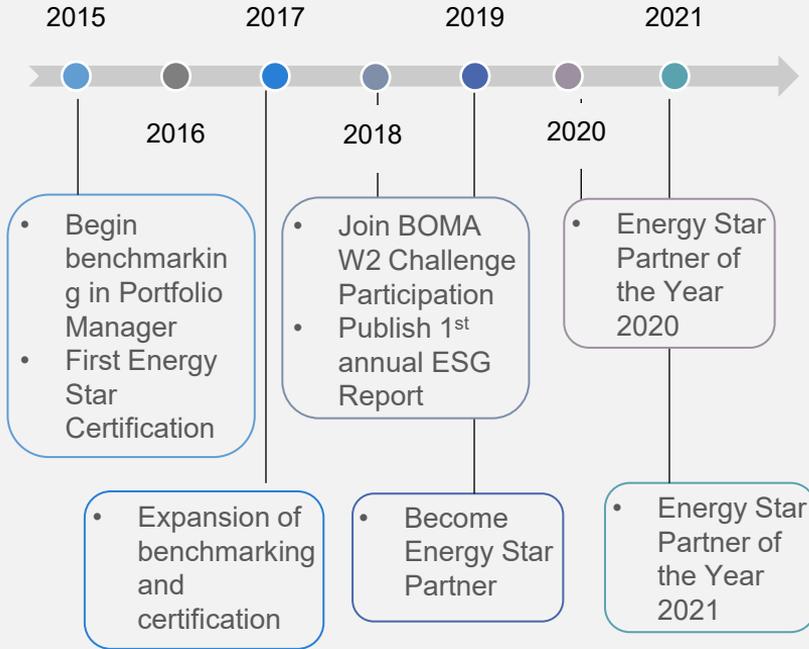
### Green Bond

EXECUTED FIRST DATA CENTER INDUSTRY GREEN BOND

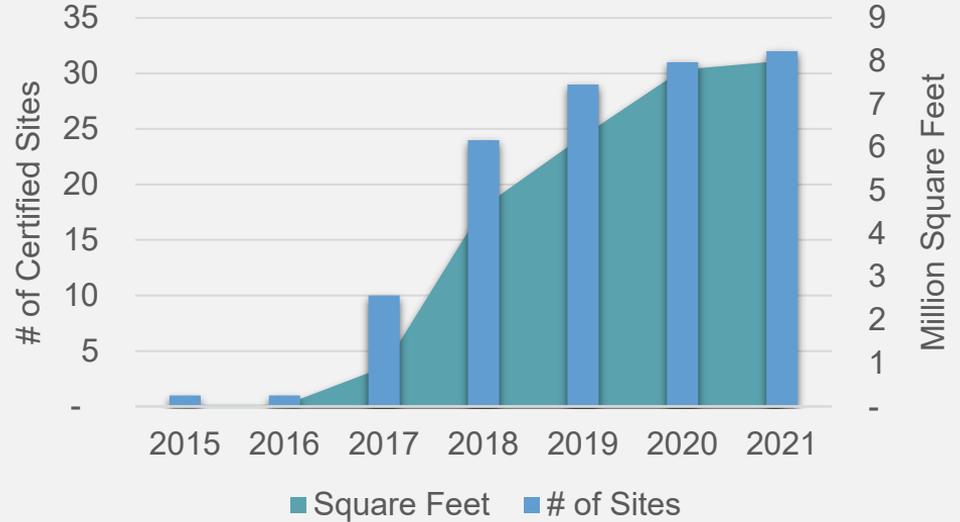
- ~\$6.0 Bn in green bonds issued since 2015
- Largest US REIT issuer of green bonds

<sup>1</sup> Data as of December 31, 2020

# Digital Realty and ENERGY STAR



## Digital Realty Certified Data Centers



# Benchmark, Benchmark, Benchmark!

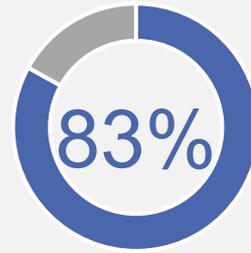
YOU CAN'T MANAGE WHAT YOU DON'T MEASURE...



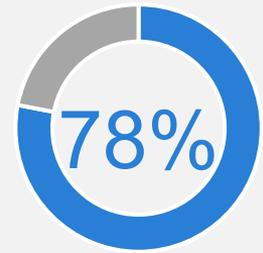
SITES BENCHMARKED IN  
ENERGY STAR  
PORTFOLIO MANAGER



ENERGY CONSUMPTION  
DATA COVERAGE



WATER CONSUMPTION  
DATA COVERAGE



WASTE GENERATION  
DATA COVERAGE

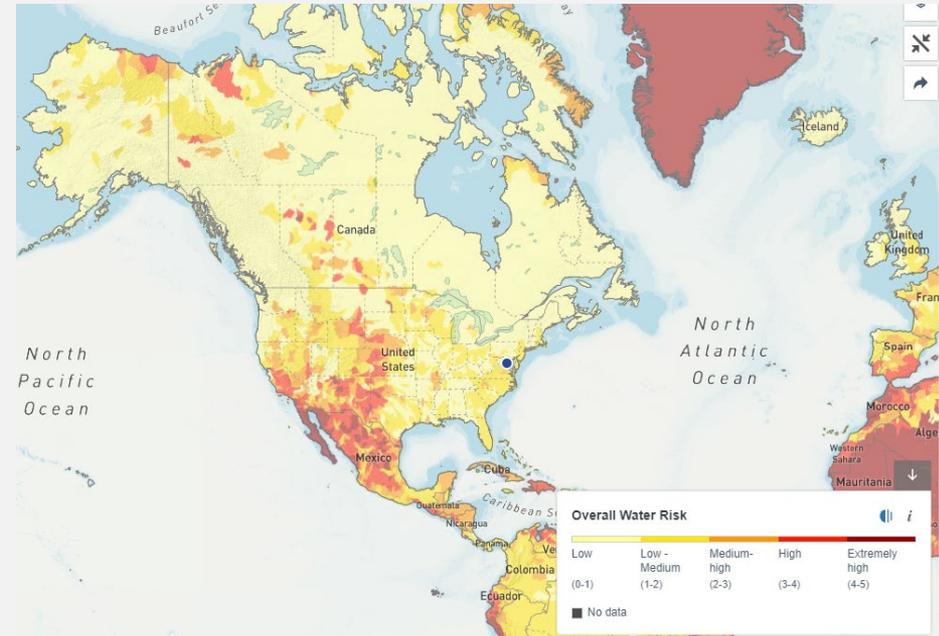
*Use the right metrics for your property type:*

- *Water Usage Effectiveness (WUE)*
- *WUI (kGal/SF, kGal/kW)*

# Evaluating Water Scarcity

## UNDERSTAND WATER SCARCITY AND STRESSORS TO GUIDE WATER PROJECTS

- ✓ World Resource Institute's Aqueduct Tool
  - <https://www.wri.org/aqueduct>
- ✓ Climate Risk Platforms
  - GRESB Physical Climate Risk Tool
  - Measurabl PCRx
- ✓ Water Risk Monetizer Tool
  - <https://about.smartwaternavigator.com/>



# Water-Free and Water Efficient Cooling Solutions

---

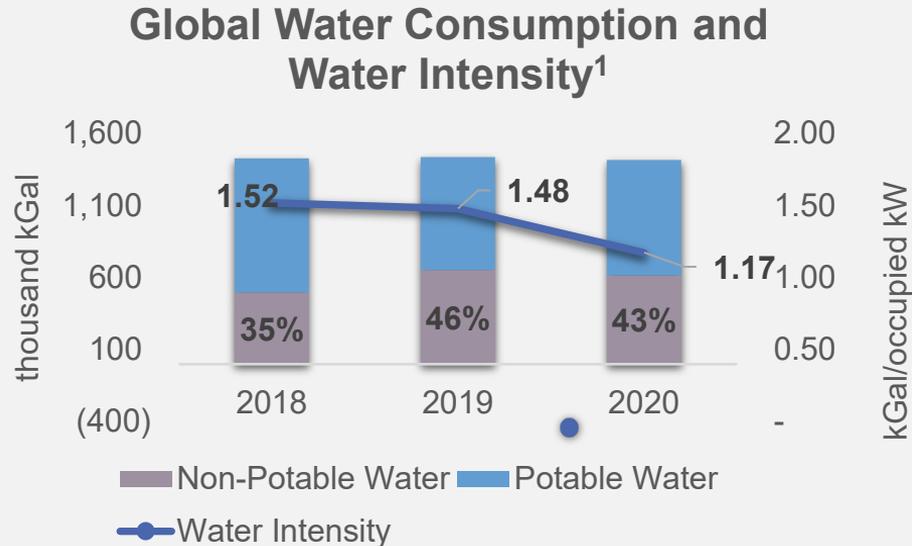
- ✓ Maximize 'free cooling' to reduce demand for water
- ✓ Prioritize cooling system designs that minimize or eliminate water usage (e.g. dry cooling, adiabatic cooling)
- ✓ Utilize shared cooling solution such as district chilled water and river water cooling loops
- ✓ Implement sub-metering for cooling systems to measure and manage water usage

*Data centers, because of their 24-7-365 cooling loads, may use as much as 3.7 times more water per square foot than office properties*

# The Renewable Energy of Water

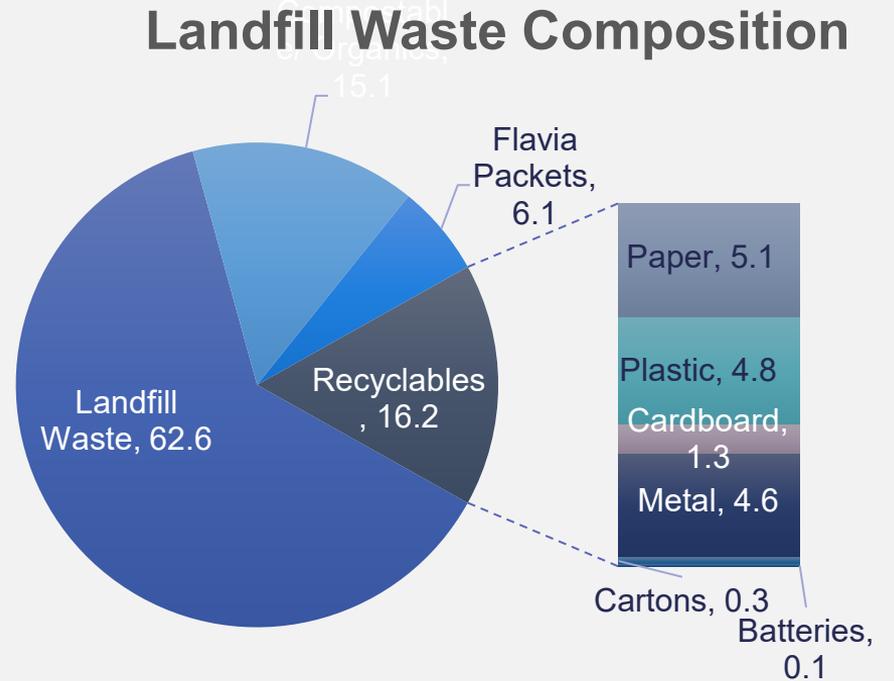
## Non-Potable Water Use

*Utilize non-potable water supplies for landscape irrigation and cooling systems*



<sup>1</sup>Data excludes properties where Digital Realty does not have operational control. Non-potable water includes municipally reclaimed and onsite recycled water. Decreases in water consumption in 2020 may be a result of impacts from COVID-19.

# Waste Audit Example



# Waste Best Practices

1. Order larger waste and recycling bins for common areas
2. Provide clear signage for recycling and waste bins
3. Work with haulers to provide waste and recycling metrics
4. Right-size front load dumpster service frequency
5. Optimize location of dumpsters
6. Implement a compost stream
7. Implement wood pallet recycling
8. Request breakroom coffee supplier to provide packet recycling
9. Use reusable kitchenware
10. Replace breakroom single use products with BPI-certified products
11. Promote ongoing awareness at site (signs, communications)
12. Remind janitorial team to dispose of plastic supply bottles in recycling



## Summary and What's to Come

---



1. Benchmark



2. Use sector-specific metrics



3. Assess water risk



4. Find ways to **reduce**



5. Find ways to **recycle**



6. Think **globally**, act **locally**

## NEXT STEPS

---

1. Improve waste benchmarking
2. Implement Global Water Strategy across prioritized sites
3. Report on WUE metrics

# THANK YOU!

- SORMEH MCCULLOUGH | SR. MANAGER, ESG
- [smccullough@digitalrealty.com](mailto:smccullough@digitalrealty.com)

# Upcoming ENERGY STAR Award Winner Webinars

**December 9 @ 1 PM  
EST**

**Working Together to Save Energy:  
Employee Engagement Strategies**

Register here:

[https://www.energystar.gov/buildings/training/learn\\_best](https://www.energystar.gov/buildings/training/learn_best)

# Upcoming Industrial webinars

**December 9 @ 1 PM EST [Bakeries](#)**

***Speakers:***

- **Weston Foods' ACE Gaffney,  
South Carolina**
- **Winnipeg, Canada commercial  
bakeries**

**[Register here](#)**



Questions?

