

Appendix E - Two Birds, One Stone - BEPS Overview at Montgomery County Energy Summit –  
April 15, 2024

**Disclaimer:** The Maryland Department of the Environment, "the Department", withdrew the December 2023 proposed BEPS regulation and advanced a new draft BEPS regulation in 2024. The Energy Use Intensity (EUI) Standard mentioned in Appendix E was withdrawn from the statewide 2024 draft BEPS regulation. In 2027, the Department intends to adopt the EUI standards proposed in 2023.

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# Two Birds, One Stone: Compliance Strategies for Meeting Building Performance Standards in Montgomery County and Maryland

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Montgomery County DEP



## Montgomery County Energy Summit





## BEPS Background

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- Building Energy Performance Standards (BEPS) are emerging in cities, counties, and states across the nation
- The typical goal of a BEPS is to guide large buildings to higher levels of energy efficiency and/or lower levels of greenhouse gas emissions
- Building owners report their metered energy data to the specific jurisdiction generally through Energy Star Portfolio Manager (ESPM)
- Decarbonizing large buildings is an important step toward achieving local, state, national, and global greenhouse gas reduction goals



# Agenda

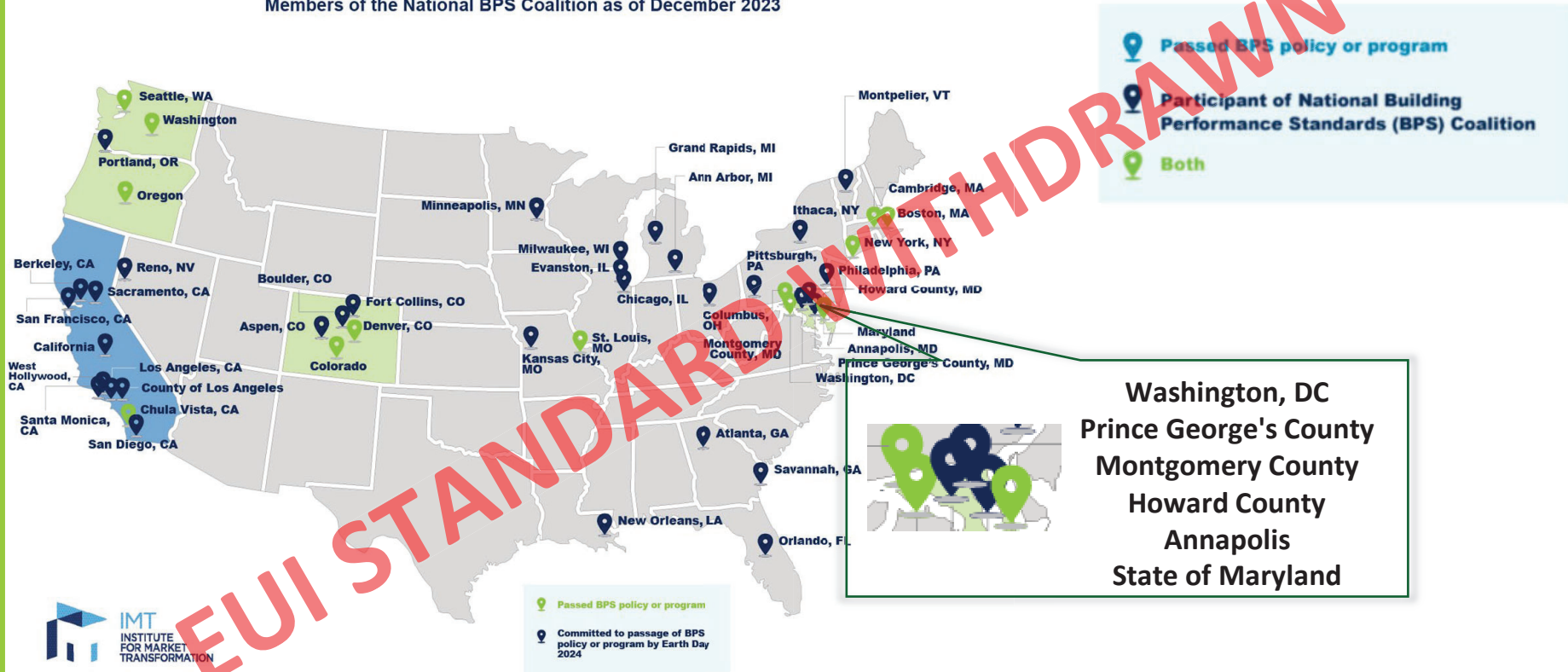
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- What are Building Energy Performance Standards (BEPS)
- Who's covered
- Where you are: Benchmarking
- Where you need to go: BEPS Compliance
- What you may need to do:
  - Audits
  - Energy Efficiency
  - Electrification

EUI STANDARD WITHDRAWN

# BEPS Is an Emerging Policy Nationwide

The State of Building Performance Standards (BPS) in the U.S.  
Members of the National BPS Coalition as of December 2023



MD joined the White House National Building Performance Standards (BPS) Coalition in July 2023



## State of MD BEPS Background

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- The Climate Solutions Now Act of 2022 (CSNA) requires the Maryland Department of the Environment (MDE) to develop BEPS regulations that cover most large buildings in the state
- BEPS is a key part of achieving Maryland's CSNA required greenhouse gas reduction goals of 60% by 2031, and net-zero economywide by 2045 (compared to 2006 levels)

EUI STANDARD WITHDRAWN



## Relevant BEPS Metrics

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### Net Direct GHG Emissions

- Measures the sum of all direct greenhouse gas emissions from a covered building
- Units: Kg carbon dioxide equivalent (CO<sub>2</sub>e) per square foot

### Site Energy Use Intensity (EUI)

- Measures the total on-site energy use within a covered building
- Units: Thousand British Thermal Units (kBtu) per square foot

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## Covered Buildings

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A “covered building” exceeds the square footage threshold, excluding parking garage area:

**MoCo: 25,000 ft<sup>2</sup>**, excluding buildings where 50% of the total gross floor area is used for:

- Public assembly in a building without walls
- Industrial uses where the majority of energy is consumed for manufacturing, the generation of electric power or district thermal energy to be consumed offsite, or for other process loads
- Transportation, communications, or utility infrastructure

**State of MD: 35,000 ft<sup>2</sup>**, excluding:

- Historic buildings (individually designated as historic property under law)
- Public or nonpublic elementary and secondary school buildings
- Manufacturing buildings
- Agricultural buildings
- Federal buildings



# Montgomery County BEPS Background

- The Building Energy Benchmarking Use Benchmarking and Performance Standards law was passed in 2022
- Requires DEP to develop executive BEPS regulations that “increase the energy efficiency of existing covered buildings and expedite the reduction of greenhouse gas emissions from the building sector”
- Decarbonizing large buildings is an important step toward achieving Montgomery County’s greenhouse gas reduction goals



## You Own a Large Building In MoCo, Maryland– What Now?

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1. Determine if your building is covered under either regulation by calculating your square footage or evaluating exemption status
  - Your Building < 25,000 ft<sup>2</sup>- No compliance necessary with any BEPS
  - 25,000 ft<sup>2</sup> < Your Building < 35,000 ft<sup>2</sup>- Compliance with MoCo BEPS only
  - Your Building > 35,000 ft<sup>2</sup>- Compliance with State and MoCo BEPS
2. No matter which category: **start benchmarking!**
3. See where you stand!
4. Identify available funding sources for any retrofits

## Available Support



### EmPOWER MD

Utility incentives: staff O&M training, building tune ups, equipment



Financing and technical assistance offered by Montgomery County Green Bank and MD Clean Energy Center



### County Tax Incentives

Energy performance property tax credit for new and existing buildings



### Maryland Energy Administration

Grants, financing, CHP, EV charging, solar, resiliency hubs



### Federal Incentives

Tax credits/ deductions (179-D, ITC, etc.)





# Proposed Requirements for Building Owners

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## Annually beginning in 2025

Use EPA's ENERGY STAR Portfolio Manager to track annual energy use and greenhouse gas emissions.

State of Maryland

Benchmark

## Annually by June 1

Use EPA's ENERGY STAR Portfolio Manager to track annual energy use and greenhouse gas emissions.

MoCo

**ENERGY STAR STANDARD WITHDRAWN**



# Proposed Requirements for Building Owners

State of Maryland

## Annually beginning in 2025

Use EPA's ENERGY STAR Portfolio Manager to track annual energy use and greenhouse gas emissions.

## Annually beginning in 2025

Assess net direct GHG emissions and site EUI.

Benchmark

Assess

MoCo

## Annually by June 1

Use EPA's ENERGY STAR Portfolio Manager to track annual energy use and greenhouse gas emissions.

## Annually following the building's baseline

Determine if changes are needed to reduce EUI to achieve the standards.

EUI STANDARD WITHDRAWN



# Proposed Requirements for Building Owners

State of Maryland

## Annually beginning in 2025

Use EPA's ENERGY STAR Portfolio Manager to track annual energy use and greenhouse gas emissions.

## Annually beginning in 2025

Assess net direct GHG emissions and site EUI.

## Annually beginning in 2030

Achieve site EUI. Meet net direct GHG emissions or pay an alternative compliance fee

Alternative Compliance

Benchmark

Assess

Achieve Standards

MoCo

## Annually by June 1

Use EPA's ENERGY STAR Portfolio Manager to track annual energy use and greenhouse gas emissions.

## Annually following the building's baseline

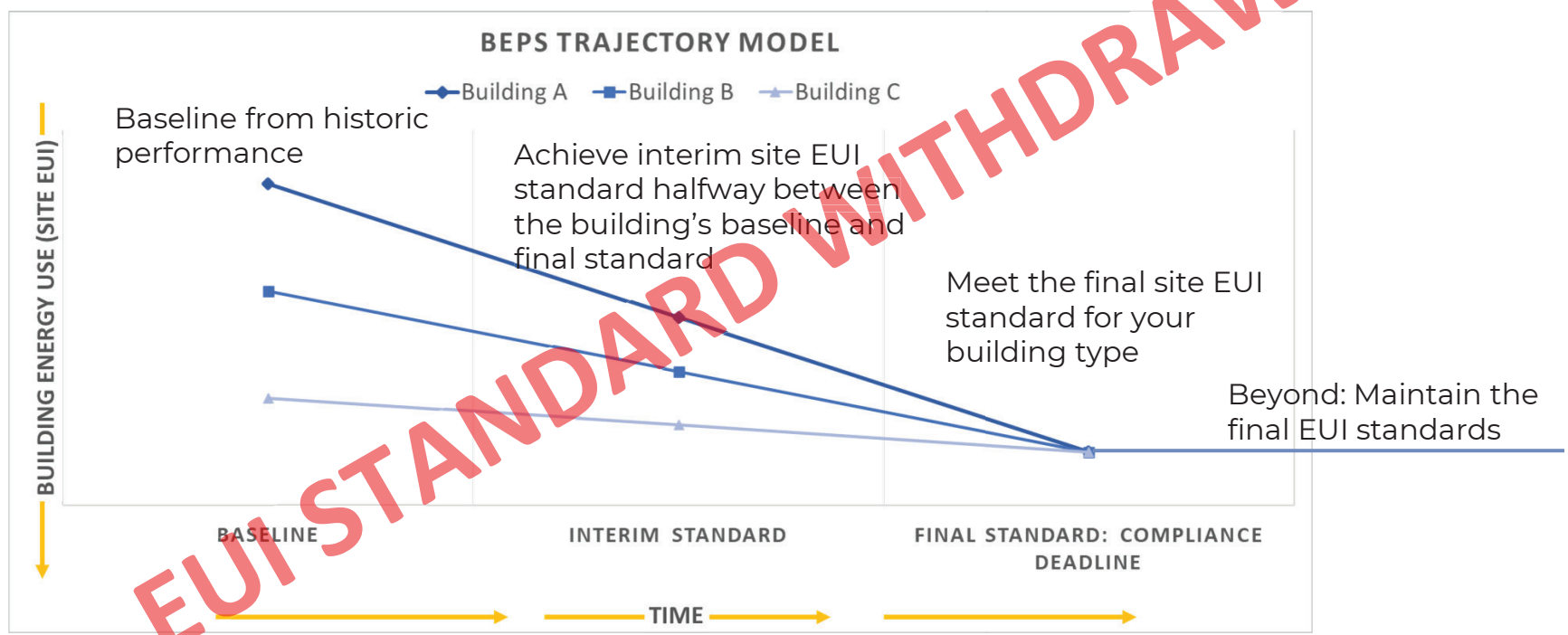
Determine if changes are needed to reduce EUI to achieve the standards.

## Interim & Final Standards

Achieve specified levels of site EUI or file a building performance improvement plan. Class A Violation for non-compliance.

# County's Performance Standards

## Site Energy Use Intensity Standards ("site EUI standards")

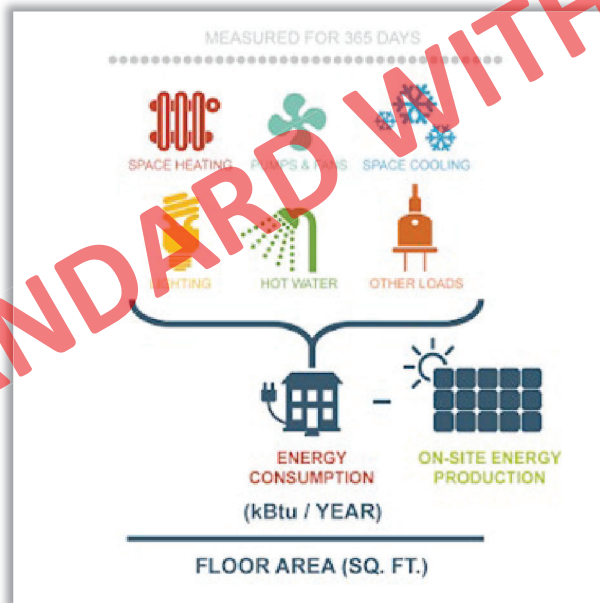


*Approximately 1 in 3 covered buildings report site EUI at or below the proposed final site EUI standards*

# County's Performance Standards

## Performance Metric: Net Normalized Site EUI

- Building performance for County BEPS measured in "net normalized site EUI." Allows for onsite renewable energy generation to be deducted from the building's site energy use.





# County's Performance Standards

## Alternative Compliance Path: Building Performance Improvement Plan

Buildings for which the EUI standards are technically or economically infeasible can file a Building Performance Improvement Plan in lieu of meeting the site EUI target

- ASHRAE Level 2 audit
- Retrofit plan
- Annual reporting on implemented projects, per the plan

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# County's Performance Deadlines

Building Group	First Benchmarking Deadline	Baseline Years	Interim Standard	Final Standard
County County-owned buildings 50k+	June 1, 2015	2018-2022	12/31/28	12/31/33
Group 1: Non-Residential >250k gsf	June 1, 2016	2018-2022	12/31/28	12/31/33
Group 2: Non-Residential 50-250k gsf	June 1, 2017	2018-2022	12/31/28	12/31/33
Group 3: Non-Residential 25 – 50k	June 1, 2023	2022-2024	12/31/30	12/31/35
Group 4: Residential >250k gsf	June 1, 2023	2022-2024	12/31/30	12/31/35
Group 5: Residential 25-250k gsf	June 1, 2024	2023-2025	12/31/31	12/31/36



## Dual Compliance: Retrofit Strategies

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- Reduce your Site Energy Use Intensity (EUI)!
- Benchmarking
- Energy Audits
- Energy Efficiency Retrofits
- Electrification Measures

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# Dual Compliance: Benchmarking

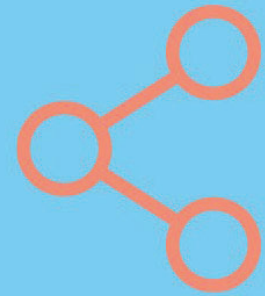
## CREATE AN ESPM ACCOUNT AND TAKE FREE TRAININGS

Energy Star Portfolio Manager is the chosen energy benchmarking tool for compliance with Maryland's BEPS. Make a free account and start familiarizing yourself with the tool and its available trainings



## LINK YOUR BUILDING WITH YOUR UTILITY

The majority of your energy data will be provided by a utility. In addition to creating your ESPM account, research your utility providers' data sharing process to make sure the data you receive is timely and accurate



## DETERMINE YOUR BUILDING CHARACTERISTICS

Set yourself up for benchmarking success by ensuring your building square footage and utility meter information is accurate



## PLAN AHEAD

Once you have access to your data in ESPM, determine how your building needs to perform to comply with BEPS and make a plan to get there



**EUI STANDARD WITHDRAWN**



## Exempted Consumption

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- **Both MoCo and State:** EV charging is excluded
- **State Only:** Energy use associated with food service facilities is excluded

EUI STANDARD WITHDRAWN

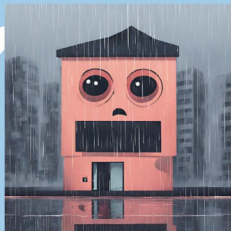


# Dual Compliance: Energy Audits

## SYMPTOMS THAT YOUR BUILDING IS SICK

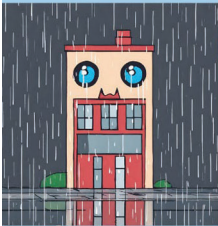
### HIGH UTILITY BILLS

Are those electric and gas bills not going down no matter what?



### WEIRD NOISES

Creepy noises coming from your walls and air vents?



## WHAT SHOULD YOU DO?

### GET AN ENERGY AUDIT

An Energy Audit is a physical for a building. Energy Audits can identify major energy saving opportunities and safety concerns. Contact your utility provider about types of offered Energy Audits.



Maryland Department of the Environment

Most utility providers, like the ones below, offer ratepayer funded energy audits to customers. Research your options today and get your building back to health!



pepco<sup>SM</sup>

AN EXELON COMPANY



bge<sup>SM</sup>

AN EXELON COMPANY

**SMECO**<sup>SM</sup>

Southern Maryland Electric Cooperative

**PotomacEdison**<sup>TM</sup>

A FirstEnergy Company

# County Benchmarking/BEPS Resources

## Montgomery County Green Bank Technical Assistance

- Connection with contractor
- Subsidy to offset cost of benchmarking services
  - Benchmarking
  - Gross floor area assessment
  - Data verification
- Subsidy to offset cost of building studies
  - Energy audits
  - Electrification feasibility
  - Renewable energy feasibility
  - EV infrastructure feasibility



# Dual Compliance: Energy Efficiency

**LIGHTING**

- Upgrade all lighting to LED's
- Reduce lighting power density

**BUILDING ENVELOPE**

- Reduce envelope leakage
- Improve Insulation

**RETRO - COMMISSIONING**

- Conduct stage 1, 2, and 3 commissioning

**HVAC**

- Install residential controls
- Adjust HVAC schedules

**PLUG LOAD CONTROL**

- Smart plug load management tools

**EXISTING STANDARD WITHDRAWN**





# Dual Compliance: Electrification

## 1 MULTIFAMILY



Air to Water, Ground Source,  
Packaged Terminal or Air Source  
Heat Pump, and VRF



240V or Central Heat Pump Water  
Heater



Heat Pump or Condenser Dryer



Induction Range or Hob



**EUJI STANDARD WITHDRAWN**



# Dual Compliance: Electrification



**2** SMALL COMMERCIAL

 Heat Pump (Air to Water, Ground Source, Packaged Terminal, Air Source) and VRF

 Point of Use, Distributed Tankless

 CO2 Laundry System

 Induction Range or Hob, Electric Oven/Fryer, Combo Oven, or Chain Broiler

**EU/STANDARD WITHDRAWN**



# Dual Compliance: Electrification

## 3 LARGE COMMERCIAL



Heat Pump (Air to Water, Ground Source, Air Source), VRF, and HRC



Point of Use, Distributed Tankless



CO2 Laundry System



Induction Range or Hob,  
Electric Oven/Fryer,  
Combo Oven, or Chain Broiler



**EUI STANDARD WITHDRAWN**



# Dual Compliance: Electrification



**4 HIGHER EDUCATION**

 Heat Pump (Air to Water, Ground Source, Packaged Terminal, Air Source), VRF, and HRC

 240V or Central Heat Pump Water Heater, and Point of Use Distributed Tankless

 CO2 Laundry System

 Induction Range or Hob, Electric Oven/Fryer, Combo Oven, or Chain Broiler



## Planned Stakeholder Support

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- 2024 planned stakeholder working groups to develop additional BEPS implementation support materials:
  - Benchmarking and report submission
  - Third party verification
  - Campus compliance
  - Affordable housing providers
  - Unique building types
- MDE will conduct outreach to covered building owners and provide training materials to assist them in meeting the first benchmarking requirement

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# County DEP Resources

## Energy Benchmarking Reports Due June 3, 2024

- Commercial and multifamily buildings 25,000+ gross square feet
- DEP Helpdesk
- Green Bank Technical Assistance (benchmarking, data verification, gross floor area verification, energy audits and other building studies)

## New Public Data Access Tools in Development

- Benchmarking Map
- Target Look-Up Tool

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# Coming soon! Energy Benchmarking Map

**Montgomery County Building Energy Performance Map**

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
MONTGOMERY COUNTY - MARYLAND

ENERGY STAR PortfolioManager®

About Benchmarking | About Building Energy Performance Standards

Benchmarking Reporting Portal | Performance Requirements Lookup Tool

**Filter Covered Buildings**  
Define the filters to show the desired covered buildings

Search

Search by Address or MBID or Name

Reporting Year: 2023

Property Type: All Property Types

Benchmarking Group: All Benchmarking Group

Data Shown on Map: Benchmarking Compliance Status

[View Comparison](#)

**Energy Performance Metrics**

**Benchmarking Compliance Status**

- In Compliance
- Pending Revisions
- Out of Compliance
- Waived

**The Janie Salzano Center for Autism**  
Building 03420324  
8615 E Village Ave 20886  
Status - In Compliance  
WN Site EUI - 72.0  
Site EUI - 65.0

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## Coming soon! Target Look-Up Tool

- Site EUI standards still pending Council approval of BEPS regulations
- Will provide baselines, latest performance (including onsite renewable energy credit), and “projected” interim and final site EUI standards based on proposed regulations

DEPARTMENT OF ENVIRONMENTAL PROTECTION MONTGOMERY COUNTY - MARYLAND

Montgomery County Building Energy Performance Map

ENERGY STAR Portfolio Manager

About Benchmarking About Building Energy Performance Standards

Benchmarking Reporting Portal Performance Requirements Look Up

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Define the filters to show the desired covered buildings

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Search by Address or MBID or Name

Reporting Year

2023

Property Type

All Property Types

Benchmarking Group

All Benchmarking Group

Data Shown on Map

Benchmarking Compliance Status

1400 Spring Street: 1400 Spring Street

Office

1400 Spring St  
Silver Spring, 20910  
MBID 01088310  
73,903 ft<sup>2</sup>  
Group - Group 2  
Benchmarking Status - In Compliance

[View Performance Requirements](#)

WN Site EUI/Final Target EUI  
**52.5 / 55**  
kBTU/ft<sup>2</sup>

Add to Comparison

31





## Questions?

Maryland Department of the  
Environment  
Building Decarb Team

[beps.mde@maryland.gov](mailto:beps.mde@maryland.gov)  
410-537-3183

MDE BEPS Website



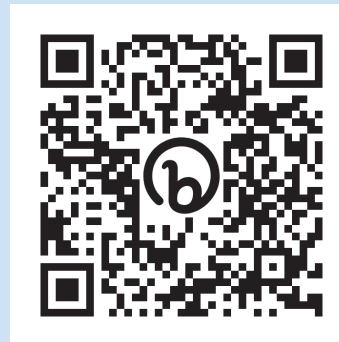
MDE BEPS Email List



Montgomery County  
Department of  
Environmental Protection

[Energy@MontgomeryCountyMD.gov](mailto:Energy@MontgomeryCountyMD.gov)  
240-777-7707

Benchmarking Site



BEPS Site

