Montgomery County Council

Committee: T&E
Committee Review: At a future date
Staff: Ludeen McCartney-Green, Legislative Attorney
Purpose: To introduce agenda item – no vote expected
Keywords: [1]#EnvironmentalSustainability

AGENDA ITEM 9A
May 4, 2021
Introduction

SUBJECT

Bill 16-21, Environmental Sustainability - Building Energy Use Benchmarking and Performance Standards - Amendments
Lead Sponsor: Council President Hucker at the request of the County Executive

EXPECTED ATTENDEES

None

COUNCIL DECISION POINTS & COMMITTEE RECOMMENDATION

- To introduce Bill – no vote expected

DESCRIPTION/ISSUE

Bill 16-21 would:

- expand the number of buildings covered by benchmarking requirements;
- amend certain definitions;
- establish energy performance standards for covered buildings with certain gross floor area;
- create a Building Performance Improvement Board; and
- generally revise County law regarding environmental sustainability.

SUMMARY OF KEY DISCUSSION POINTS

This report contains:

Agenda Item 9A
May 4, 2021
Introduction

M E M O R A N D U M

April 29, 2021

TO: County Council

FROM: Ludeen McCartney-Green, Legislative Attorney

SUBJECT: Bill 16-21, Environmental Sustainability - Building Energy Use Benchmarking and Performance Standards - Amendments

PURPOSE: Introduction – no Council votes required

Bill 16-21, Environmental Sustainability - Building Energy Use Benchmarking and Performance Standards - Amendments, sponsored by Lead Sponsor, Council President Hucker at the request of the County Executive, is scheduled to be introduced on May 4.[1] A public hearing is tentatively scheduled for June 15, 2021 at 1:30 p.m.

Bill 16-21 would: (1) expand the number of buildings covered by benchmarking requirements; (2) amend certain definitions; (3) establish energy performance standards for covered buildings with certain gross floor area; (4) create a Building Performance Improvement Board; and (5) generally revise County law regarding environmental sustainability.

BACKGROUND

Montgomery County encompasses more than 5,000 commercial and multifamily properties covering more than 288 million square feet of rentable building area. The County's commercial building stock is primarily made up of office, multifamily, and retail buildings (by total number and rentable square footage).[2] Commercial buildings also account for 26 percent of greenhouse gas (GHG) emissions in Montgomery County.[3]

In 2014 the County established in the nation, the first benchmarking law, Environmental Sustainability – Chapter 18A, for County-owned and commercial building areas 50,000 square feet and above to annually track and report building and energy performance details to the County's Department of Environmental Protection (DEP). As of June 2020, DEP reports the County's Benchmarking Law covers over 100 million gross square feet of commercial building area across approximately 700 properties. However, to meet the County's Climate Action Plan goal of zero greenhouse gas emission by 2035, community key stakeholders have recommended the County to implement "beyond benchmarking" policies and modify legislation to adopt Building Energy Performance Standards (BEPS) with a phased approach.

[1] #EnvironmentalSustainability

[2] Source: CoStar Commercial Real Estate Information Company. Data accessed April 2021.

[3] Source: MWCOG County-wide Greenhouse Gas Emissions Inventory. 2018 data.

In 2020, several engaged stakeholders from the impacted community, in coordination with DEP, held a series of working group sessions and analyzed that the main drivers of reducing greenhouse gas emissions among the commercial building sector are reducing energy consumption, using energy more efficiently, and using energy generated from cleaner sources. The electricity supplied to the County is getting cleaner as the grid adds more renewable sources, but still has a long way to go. Fifty-six percent of the electricity consumed in Maryland is generated by fossil fuels and as mentioned, commercial buildings in the County account for twenty-six percent of greenhouse gas emission ©44.

With a defined lens, the working group reviewed building energy performance policy models from various jurisdictions, *i.e.* Washington, DC, New York City, St. Louis and Washington State. ©40-43 and developed policy recommendations for the County to improve its commercial and multifamily residential building sector by adopting energy conservation and efficiency standards that will reduce energy use and mitigate climate change.

SPECIFICS OF THE BILL

Bill 16-21 will modify the County's current benchmark law to include additional County-owned, commercial, and multifamily buildings to the meet long-term energy performance standards. The legislation would create a 15-voting member Building Performance Improvement Board that will advise DEP on implementation of building energy performance standards, including amongst other delineated advisory functions, enforcement of benchmarking requirements and performance standards. Further, Bill 16-21 would establish a Building Performance Improvement Plan (BPIP) process for properties that cannot reasonably meet the interim or final performance standards. The property owner will be required to timely complete specific actions in the approved BPIP to be considered in compliance with the law. Penalties or fines may be assessed if the property owner is determined to be non-compliant. Further, annual reports are due to the County Executive and County Council on building energy performance for covered buildings.

Bill No. 16-21
Concerning: Environmental Sustainability - Building Energy Use Benchmarking and Performance Standards – Amendments
Revised: 4/26/2021 Draft No. 1
Introduced: May 4, 2021
Expires: November 4, 2022
Enacted: [date]
Executive: [date signed]
Effective: [date takes effect]
Sunset Date: None
Ch. [#], Laws of Mont. Co. [year]

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

Lead Sponsor: Council President at the request of the County Executive

AN ACT to:

(1) expand the number of buildings covered by benchmarking requirements;
(2) amend certain definitions;
(3) establish energy performance standards for covered buildings with certain gross floor area;
(4) create a Building Performance Improvement Board; and
(5) generally revise County law regarding environmental sustainability.

By amending
Montgomery County Code
Chapter 18A, Environmental Sustainability
Sections 18A-38A, 18A-38B, 18A-39, 18A-42, and 18A-43

By adding
Montgomery County Code
Chapter 18A, Environmental Sustainability
Sections 18A-38, 18A-42A, 18A-42B, 18A-42C, 18A-43A, 18A-43B and 40-10B

Boldface	*Heading or defined term.*
Underlining	*Added to existing law by original bill.*
[Single boldface brackets**]**	*Deleted from existing law by original bill.*
Double underlining	*Added by amendment.*
[[Double boldface brackets**]]**	*Deleted from existing law or the bill by amendment.*
* * *	*Existing law unaffected by bill.*

The County Council for Montgomery County, Maryland approves the following Act:

Sec. 1. Sections 18A-38A, 18A-38B, 18A-39, 18A-42, and 18A-43 are amended and Sections 18A-38, 18A-42A, 18A-42B, 18A-42C, 18A-43A, 18A-43B and 40-10B are added as follows:

Article 6. Building Energy Use Benchmarking and Performance Standards.

18A-38[A]. Intent.

The intent of this Article is to:

* * *

(b) engage the commercial and multifamily residential building sector with building energy information crucial to adopting energy conservation and efficiency opportunities;

* * *

(d) strengthen the local economy by encouraging more efficient business operations and providing new opportunities for local businesses that provide energy conservation and efficiency services; **[**and**]**

(e) recognize building owners that have made investments to improve their building energy performance and expand in-house capacity for energy management**[**.**]**; and

(f) improve the energy performance of covered buildings through established building energy performance standards, therefore, reducing greenhouse gas emissions from the built environment and helping the County achieve its climate action goal of zero greenhouse gas emissions by 2035.

18A-38[B]A. Definitions.

In this Article, the following words have the meanings indicated:

Affordable housing means a dwelling unit whose sale or rental price does not exceed that of a moderately priced dwelling unit under Chapter 25A or group senior assisted housing.

Benchmark means to track and input a building's energy consumption data and other relevant building information for 12 consecutive months, as required by the benchmarking tool, to quantify the building's energy use.

Benchmarking tool means the website-based software, commonly known as ENERGY STAR Portfolio Manager, or any successor system, **[**developed and maintained**]** approved by the United States Environmental Protection Agency to track and assess the relative energy use of buildings nationwide.

Building means:

(1) any single structure utilized or intended for supporting or sheltering any occupancy, except if a single structure contains two or more individually metered units operating independently that have stand-alone heating, cooling, hot water, and other mechanical systems, and no shared interior common areas, or;

(2) two or more structures utilized or intended for supporting or sheltering any occupancy, that:

(A) are serviced by a common energy meter;

(B) have a common heating or cooling system;

(C) share interior common areas; or

(D) whose configuration otherwise prevents an accurate determination of the energy consumption attributable to each individual structure.

Building energy performance standard means a policy that sets a minimum required level of energy performance for covered buildings.

Building performance improvement plan means a document in a format approved by the Director submitted by a covered building owner and approved by the Director as described in this Article.

Building type means a category of covered buildings subject to the same final performance standards.

* * *

County-owned covered building means **[**any**]** a building owned by the County**[**, or any group of buildings owned by the County that have the same property identification number, that**]** whose gross floor area equals or exceeds **[**50,000**]** 25,000 **[**in total building**]** square **[**footage**]** feet.

Covered building means **[**any**]** a County-owned **[**building**]**, Group 1 **[**covered building**]**, **[**or**]** Group 2, Group 3, Group 4, or Group 5 covered building.**[**Covered building does not include any building with more than 10% of total building square footage which is used for

(1) public assembly in a building without walls;

(2) warehousing;

(3) self storage; or

(4) a use classified as manufacturing and industrial or transportation, communication, and utilities.**]**

* * *

[*Energy use intensity* or *EUI* means a numeric value calculated by the benchmarking tool that represents the energy consumed by a building relative to its size.**]**

Final performance standard means the numeric value of site EUI that each covered building must ultimately achieve or exceed.

Gross floor area means the total building square footage measured between the principal exterior surfaces of the enclosing fixed walls of a building. *Gross floor area* consists of all areas inside the building, including lobbies, tenant areas, common areas, meeting rooms, break rooms, the base level of atriums, restrooms, elevator shafts, stairwells, mechanical equipment areas, basements,

and storage rooms. *Gross floor area* does not include exterior spaces, balconies, patios, exterior loading docks, driveways, covered walkways, outdoor play courts (e.g., tennis, basketball), parking, the interstitial space between floors (which house pipes and ventilation), and crawl spaces. *Gross floor area* is not the same as rentable space, but rather includes all areas inside the building(s).

Group 1 covered building means **[**any**]** a privately owned nonresidential covered building**[**, or any group of nonresidential buildings that have the same property identification number, not owned by the County that**]** whose gross floor area equals or exceeds 250,000 **[**in total building**]** square **[**footage**]** feet.

Group 2 covered building means **[**any**]** a privately owned nonresidential covered building**[**, or any group of nonresidential buildings that have the same property identification number, not owned by the County that**]** whose gross floor area equals or exceeds 50,000 square feet **[**gross floor area**]** but is less than 250,000 **[**in total building**]** square **[**footage**]** feet.

Group 3 covered building means:

(1) a privately owned nonresidential covered building whose gross floor area equals or exceeds 25,000 square feet but is less than 50,000 square feet; or

(2) a privately owned nonresidential covered building whose gross floor area equals or exceeds 50,000 square feet and whose use type was previously exempted under this Article.

Group 4 covered building means a privately owned multifamily residential or mixed-use covered building whose gross floor area equals or exceeds 250,000 square feet.

Group 5 covered building means a privately owned multifamily residential or mixed-use building whose gross floor area equals or exceeds 25,000 square feet but is less than 250,000 square feet.

Interim performance standard means the numeric value of site EUI which covered buildings must achieve or exceed by a fixed date every four (4) years from a covered building's performance baseline.

Interior common area means shared space within a building such as hallways, lobbies, stairwells, and other shared amenities (e.g., gyms, laundry rooms, party rooms).

Mixed-use building means a building that contains both residential units and commercial space.

Net site EUI means site energy use minus energy generated from onsite solar sources divided by the total gross floor area of the building expressed in kBtu/GSF.

Newly constructed covered building means a covered building whose owner has completed construction, received a use and occupancy permit, and is able to begin benchmarking the building's energy use and other characteristics.

Normalized net site energy means the site energy use by the covered building normalized for weather and other characteristics within the limits of the capabilities of the benchmarking tool and normalized for other factors as determined by the Department minus energy generated from onsite solar sources.

Normalized net site EUI means the total normalized net site energy use consumed by a covered building in one year divided by the total gross floor area of the building expressed in kBtu/GSF.

Owner means an individual or legal entity in whose name a building is titled, or in the case of a community association, the governing body of either a condominium or a cooperative housing corporation.

Performance baseline means the normalized net site EUI for a covered building averaged over two calendar years.

Performance metric means an objectively verifiable numeric measure of normalized site EUI to determine building performance.

Process load means energy consumed for bona fide purposes other than heating, cooling, ventilation, domestic hot water, lighting, appliances, office equipment, data centers, or other plug loads.

* * *

Reported benchmarking information means the descriptive information about a building, its operating characteristics, and information generated by the benchmarking tool regarding the building's energy consumption, **[**and**]** efficiency, and performance. *Reported benchmarking information* includes the building identification number, address, gross floor area, energy performance score, site energy use intensity, and annual greenhouse gas emissions.

[*Residential occupancy* means the occupancy of dwelling units in any building that includes one or more dwellings.**]**

Site energy use means all energy used onsite by a covered building to meet the energy loads of a building, including electricity delivered to the building through the electric grid and generated onsite with renewable sources; natural gas; district steam; district hot and chilled water; diesel; propane; fuel oil; wood; coal; and other fuels used onsite. Site energy use does not include electricity used to charge vehicles.

Site energy use intensity or *site EUI* means a numeric value calculated by the benchmarking tool that represents the energy consumed by a covered building relative to its size in terms of energy used per square foot of gross floor area per year.

Tenant means a person or legal entity occupying or holding possession of a building, part of a building, or premises under a rental agreement.

[*Total building square footage* means the sum of the gross horizontal area of the several floors of a building or structure measured from the exterior faces of the exterior walls or from the center line of party walls. In a covered but unenclosed area, such as a set of gasoline pumps or a drive-through area, total building square footage means the covered area. Total building square footage does not include any:

(1) basement or attic area with a headroom less than 7 feet 6 inches;

(2) area devoted to unenclosed mechanical, heating, air conditioning, or ventilating equipment;

(3) parking structure; or

(4) accessory structure to a residential building.**]**

18A-38B. Applicability.

This Article does not apply to a covered building for which more than 50% of the total gross floor area is used for:

(a) public assembly in a building without walls;

(b) 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; or

(c) transportation, communications, or utility infrastructure.

18A-39. Energy use benchmarking.

(a) *County-owned covered buildings*.

(1) No later than June 1, 2015, and every June 1 thereafter, the County must benchmark any County-owned covered building**[**s**]** whose gross floor area equals or exceeds 50,000 square feet for the previous calendar year and report the benchmarking information to the Department.

(2) No later than June 1, 2022, and every June 1 thereafter, the County must benchmark any County-owned covered building whose gross floor area equals or exceeds 25,000 square feet but is less than 50,000 square feet for the previous calendar year and report the benchmarking information to the Department.

* * *

* * *

(d) *Group 3 and Group 4 covered buildings.* No later than June 1, 2022, and every June 1 thereafter, the owner of any Group 3 or Group 4 covered building must benchmark the building for the previous calendar year and report the benchmarking information to the Department.

(e) *Group 5 covered buildings.* No later than June 1, 2023, and every June 1 thereafter, the owner of any Group 5 covered building must benchmark the building for the previous calendar year and report the benchmarking information to the Department.

(f) *Newly constructed covered building.* Following the first full calendar year that energy data can be collected and that the building was occupied, on average, by at least one full-time-equivalent employee (40 person-hours per week) exclusive of security guards, janitors, construction workers, landscapers, and other maintenance personnel throughout the calendar year being reported, the owner of any newly constructed covered building must benchmark the building and report to the Department no later than June 1 of that following year, and every June 1 thereafter.

[(d)**]** (g) *Waiver*. **[**The Director may waive the benchmarking requirements of this Section if**]** For any time period for which the owner of a covered building documents, in a form required by regulation, **[**that the building**]**

any of the conditions below, the Director may waive the benchmarking requirements of this Section**[**:**]**.

(1) **[**is in financial**]** Financial distress, defined as a building that:

(A) is the subject of a tax lien sale or public auction due to property tax arrearages;

(B) is controlled by a court appointed receiver; or

(C) was recently acquired by a deed in lieu of foreclosure;

(2) **[**had average physical occupancy of less than 50% throughout the calendar year for which benchmarking is required**]** On average, less than one full-time-equivalent employee occupied the building during the calendar year being reported; **[**or**]**

(3) The covered building is **[**new**]** newly **[**construction**]** constructed and has received its certificate of use and occupancy during the calendar year for which benchmarking is required**[**.**]**; or

(4) The covered building was demolished or received its demolition permit during the calendar year for which benchmarking is required.

18A-42. Establishment of building energy performance standards.

(a) *Requirement.* The Department must develop and implement building energy performance standards for covered buildings. The standards must:

(1) increase the energy efficiency of existing covered buildings and expedite the reduction of greenhouse gas emissions from the building sector;

(2) use normalized net site EUI as a performance metric wherever feasible or net site EUI if the Director determines that normalization is not practical as performance metric;

(3) account for onsite solar generation in the performance metric;

(4) use the benchmarking tool to report building energy performance to the County; and

(5) utilize available data sources and best practices to establish interim and final performance standards.

(b) *Building types*.

(1) No later than June 1, 2022, the County Executive must issue Method (2) regulations establishing building types for every covered building.

(2) Covered buildings within each building type must have shared characteristics that facilitate the implementation and enforcement of this Article. The Department may define one or more building types to be identical to ENERGY STAR property type categories.

(3) All covered buildings within the same building type category must be subject to the same final performance standards that facilitate the implementation and enforcement of this Article.

(c) *Performance baseline*. The performance baseline for each covered building must be calculated as follows:

(1) County-owned covered buildings whose gross floor area equals or exceeds 50,000 square feet, Group 1 covered buildings, and Group 2 covered buildings: Average of the 2 years with the highest normalized net site EUI between calendar year 2018 and calendar year 2021.

(2) County-owned covered buildings whose gross floor area is at least 25,000 square feet but not greater than 50,000 square feet, Group 3, and Group 4 covered buildings: Average of the 2 years with the

highest normalized net site EUI between calendar year 2021 and calendar year 2023.

(3) Group 5 covered buildings: Average of the 2 years with the highest normalized net site EUI between calendar year 2022 and calendar year 2024.

(4) Newly constructed covered buildings: Average of the 2 years with the highest normalized net site EUI over the first 3 years of benchmarking reporting.

(d) *Interim and final performance standards*.

(1) No later than June 1, 2022, the County Executive must issue Method (2) regulations establishing final performance standards for each building type using the normalized site EUI performance metric wherever feasible or site EUI if the Director determines that normalization is not practical.

(2) The Department must calculate each interim performance standard for each covered building with the starting point set at the covered building's performance baseline and continuing to the final performance standard.

(3) Each covered building must demonstrate progress towards the final performance standard by complying with interim performance standards every 4 years after the performance baseline year as follows:

(A) County-owned covered buildings whose gross floor area equals or exceeds 50,000 square feet, Group 1, and Group 2 covered buildings:

(i) Interim performance standards: December 31, 2026, and evaluated with June 1, 2027, benchmarking, and

December 31, 2030, and evaluated with June 1, 2031, benchmarking.

(ii) Final performance standard: December 31, 2034, and evaluated with June 1, 2035, benchmarking.

(B) County-owned covered buildings whose gross floor area is at least 25,000 square feet but not greater than 50,000 square feet, Group 3, and Group 4 covered buildings:

(i) Interim performance standards: December 31, 2028, evaluated with June 1, 2029, benchmarking, and December 31, 2032, evaluated with June 1, 2033, benchmarking.

(ii) Final performance standard: December 31, 2036, evaluated with June 1, 2037, benchmarking.

(C) Group 5 covered buildings:

(i) Interim performance standards: December 31, 2029, evaluated with June 1, 2030, benchmarking, and December 31, 2033, evaluated with June 1, 2034, benchmarking.

(ii) Final performance standard: December 31, 2037, evaluated with June 1, 2038, benchmarking.

(D) Newly constructed buildings will be added to a coverage group (Group 1, Group 2, Group 3, Group 4, or Group 5) based on gross floor area and building type:

(i) Interim performance standards: Evaluated with the first interim standard of the building's coverage group following creation of the performance baseline.

(ii) Final performance standard: Evaluated with the final performance standard of the building's coverage group, if the performance baseline is created before the final performance standard.

(4) Covered buildings must maintain the final performance standards established by regulation.

(5) Covered buildings must demonstrate compliance with the interim and final performance standards by reporting building energy benchmarking data to the Department using the benchmarking tool. The Department must determine compliance by comparing the performance metric against the interim or final performance standards for the applicable building type.

18A-42A. Building Performance Improvement Board.

(a) *Established.* The County Executive must appoint, subject to confirmation by the Council, a Building Performance Improvement Board comprised of 15 voting members. Designees of the Department of Environmental Protection, Department of General Services, and Department of Permitting Services are ex officio nonvoting members of the Board.

(b) *Membership.* Each voting member of the Board must be a resident of the County or a member of the governing body or staff of an entity doing business in the County. The Board should include:

(1) Representatives of local electricity or natural gas utilities;

(2) Providers of energy efficiency, building resilience and/or renewable energy services or consulting;

(3) Owners or managers of affordable housing;

(4) Owners or managers of multifamily residential buildings containing market-rate units;

(5) Nonresidential building owners or managers;

(6) Technical building design or operations professionals;

(7) Providers of facilities, mechanical, or similar engineering services;

(8) Commercial or multi-family residential construction finance or investment professionals;

(9) Representatives of nonprofit organizations dedicated to climate action, resiliency, public health, green building, economic development, or building decarbonization; and

(10) Representatives of nonprofit organizations dedicated to racial equity or environmental justice.

(c) *Terms*. Each voting member serves a 3-year term beginning on January 1. Of the members first appointed, one-third must be appointed for 1-year terms, one-third must be appointed for 2-year terms, and one-third must be appointed for 3-year terms. A member must not serve more than 2 consecutive full terms. A member appointed to fill a vacancy serves the rest of the unexpired term. Members continue in office until their successors are appointed and qualified. The Board must elect one of its members as Chair to be who must serve as such for one calendar year or until a successor is elected.

(d) *Procedures*. The Board must adopt rules to govern its procedures including meeting frequency, managing Chair elections, establishing committees, and other issues that pertain to Board governance.

(e) *Duties and responsibilities*. The Board must generally advise the Department on implementation of building energy performance standards. This includes providing recommendations to the Director on:

(1) Building type groupings;

(2) Interim and final performance standards for each building type;

(3) Managing situations where ownership of a building is transferred or a building's type changes;

(4) Building performance improvement plan technical review and approval processes;

(5) Complementary programs or policies, with particular attention to assistance or accommodations for challenged or under-resourced sectors, such as affordable housing, non-profit organizations, and small businesses; and

(6) Enforcement of benchmarking requirements and performance standards.

(f) *Compensation*. The members of the Board serve without compensation.

18A-42B. Building performance improvement plans.

(a) If a covered building owner cannot reasonably meet one or more of the applicable interim or final performance standards due to economic infeasibility or other circumstances beyond the owner's control, based on guidelines established by regulation, the owner may submit a proposed building performance improvement plan to the Department for review and approval by the Director in consultation with the Building Performance Improvement Board.

(b) A building performance improvement plan must include:

(1) documentation of economic infeasibility or other circumstances beyond the owner's control such that interim or final performance standards are not met;

(2) a list of potential improvement measures, including engineering calculations of energy savings and a cost-benefit analysis of each potential improvement measure;

(3) a plan and timeline for achieving energy improvements to the building's performance that will provide cost-effective energy savings based on guidelines established by regulation, including the estimated savings to be realized by implementing all of the cost-effective measures identified in the plan; and

(4) procedures for correcting any noncompliance or deviation from the plan.

(c) The owner must submit a building performance improvement plan to the Department at least 90 days before the deadline for submitting documentation of compliance with interim or final performance standards.

(d) If, after consulting with the Building Performance Improvement Board, the Director approves the building performance improvement plan, the owner must record the building performance improvement plan as a covenant in the County land records and deliver a certified copy of the recorded plan to the Department. After the Director receives the certified copy of the recorded plan, the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.

18A-42C. Extensions and adjustments.

(a) The Department may establish additional criteria recommended by the Building Performance Improvement Board for qualified affordable housing, nonprofit buildings, and other buildings as appropriate to modify compliance with interim or final performance standards by regulation.

(b) The Director, in consultation with the Building Performance Improvement Board, may grant an extension or adjustment to an interim or final performance standard for a covered building whose owner submits a request along with documentation at least 90 days before the deadline for submitting documentation of compliance with an interim or final performance standard if any of the following conditions apply:

(1) A demolition permit has been issued or a demolition of the building is planned before the deadline to comply with the next interim performance standard;

(2) The building is in financial distress under Section 18A-39 (g)(1);

(3) The building is exempt from real property taxes and the owner is able to certify by the statement of a certified public accountant or by sworn affidavit that the owner's revenue less expenses for the previous 2 years was negative; or

(4) The Director determines that strict compliance with those standards would be economically infeasible, as defined by regulation, due to circumstances beyond the owner's control.

18A-[42]43. Annual report; disclosure of benchmarking and energy performance information.

(a) *Annual report required.* By October 1 of each year, the Director must submit a benchmarking and building performance report to the County Executive and County Council. The report must review and evaluate energy efficiency in covered buildings, including:

(1) summary statistics on the most recent reported energy benchmarking information, including information on the completeness and level of data quality of the building energy data being reported by building type;

(2) discussion of any energy efficiency trends, cost savings, and job creation resulting from energy efficiency improvements; **[**and**]**

(3) for County-owned covered buildings:

(A) the scores of County-owned covered buildings benchmarked; and

(B) whether the Director recommends any energy efficiency improvements for specific buildings; and

(4) building energy performance summary statistics, if an interim or final performance standard occurs for a covered building type in the current reporting cycle.

(b) *Disclosure of benchmarking and building energy performance standards* **[***information***]** *data*. The Director must make reported aggregated benchmarking and building energy performance standard **[**information**]** data readily available to the public, including on the open data website created under Section 2-154, and the Director may exempt information from disclosure only to the extent that disclosure is prohibited under federal or state law.

(c) *Exceptions to disclosure*. To the extent allowable under state law, the Director must not make the following readily available to the public:

(1) any individually **[-]**attributable reported benchmarking information from the first calendar year that a covered building is required to benchmark; **[**and**]**

(2) any individually**[-]**attributable reported benchmarking or building energy performance standards information relating to a covered building if the disclosure of the covered building's energy use would be harmful to the public interest and national security **[**that contains a data center, or television studio that together exceeds

10% of the total building square footage of the individual building until the Director finds that the benchmarking tool can make adequate adjustments for these facilities. When the Director finds that the benchmarking tool can make adequate adjustments, the Director must report this data in the annual report**]**; and

(3) Building performance improvement plans and associated documentation attributable to an individual covered building.

18A- [43]43A. Regulations[; penalties].

[(a)**]** The County Executive may issue Method (2) regulations to administer this Article.

[(b) Any violation of this Article is a Class A violation.**]**

18A-43B. Penalties; enforcement.

(a) A building owner must not knowingly provide false information required under this Article to the Department. The Director may revoke or modify an extension, adjustment, building performance improvement plan, or compliance with benchmarking or the interim or final performance standards in response to any false information provided by the building owner.

(b) Any violation of this Article is a Class A violation.

40-10B. Disclosure of covered building benchmarking and performance standards information.

(a) Before a buyer signs a contract for the sale of a covered building as defined in Section 18A-38A, the seller must:

(1) disclose to the prospective buyer that the building is subject to building energy performance standards in Chapter 18A, Article 6;

(2) transfer the following records to the prospective buyer:

(A) the benchmarking property record from the benchmarking tool;

(B) documentation of data verification; and

(C) any other related records relevant to maintain compliance with Chapter 18A, Article 6; and

(3) provide to the prospective buyer the following information:

(A) performance baseline;

(B) interim and final performance standards; and

(C) building performance improvement plan.

(b) The prospective buyer must indicate, by signing an addendum to the contract or a separate section of the contract printed in boldface type, that the seller has made the disclosures and provided the information required by subsection (a).

LEGISLATIVE REQUEST REPORT

Bill 16-21
Environmental Sustainability - Building Energy Use Benchmarking and Performance Standards – Amendments

DESCRIPTION: Bill 16-21 would:

- expand the number of buildings covered by benchmarking requirements;
- amend certain definitions;
- establish energy performance standards for covered buildings with certain gross floor area;
- create a Building Performance Improvement Board; and
- generally revise County law regarding environmental sustainability.

PROBLEM: A stakeholder recommendation report issued in September 2020 complied by Montgomery County's Department of Environmental Protection (DEP) on Building Energy Performance Standards in the County set forth policy recommendations that would require the County to adopt "beyond benchmarking" type of policies. Key stakeholders, in coordination with DEP, held a series of working group sessions and analyzed that the main drivers of reducing greenhouse gas emissions among the commercial building sector are reducing energy consumption, using energy more efficiently, and using energy generated from cleaner sources. The electricity supplied to the County is getting cleaner as the grid adds more renewable sources, but still has a long way to go. Fifty-six percent of the electricity consumed in Maryland is generated by fossil fuels and commercial buildings in the County account for twenty-six percent of greenhouse gas emission. With a defined lens, the working group reviewed building performance policy models from various jurisdictions, *i.e.* Washington, DC, New York City, and St. Louis and developed policy recommendations that will assist the County to improve its commercial and multifamily residential building sector with building energy information crucial to adopting energy conservation and efficiency opportunities that will reduce energy use and mitigate climate change.

OBJECTIVE: This bill will seek to improve the energy performance of additional covered buildings over time through established building energy performance standards, and thereby, reducing greenhouse gas emissions from the building environment and helping the County achieve its ambitious climate action goal of zero greenhouse gas emissions by 2035. It will implement a Building Performance Improvement Plan Board and generally amend County law regarding building energy efficiency and environmental sustainability.

COORDINATION: Department of Environmental Protection (DEP)

FISCAL IMPACT: Office of Management and Budget.

ECONOMIC IMPACT: Office of Legislative Oversight.

RACIAL EQUITY AND SOCIAL JUSTICE IMPACT: Office of Legislative Oversight.

EVALUATION: To be requested.

EXPERIENCE ELSEWHERE: St. Louis, Missouri; Washington, D.C.; New York City; and Washington State.

SOURCES OF INFORMATION: Stan Edwards, Division Chief, Department of Environmental Protection. (240)-777-7748 or stan.edwards@montgomerycountymd.gov.

APPLICATION WITHIN MUNICIPALITIES: This bill applies to all municipalities that accept or adopt the County Environmental Sustainability Law, Chapter 18A.

PENALTIES: Class A violation.

OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

M E M O R A N D U M

April 1, 2021

TO: Tom Hucker, Council President

FROM: Marc Elrich, County Executive

SUBJECT: Introduction of XX-21, Environmental Sustainability – Building Energy Use Benchmarking and Performance Standards – Amendments

It is my pleasure to transmit the attached legislation (XX-21, Building Energy Use Benchmarking and Performance Standards – Amendments) to modify the County's current Building Energy Benchmarking Law. The legislation will: expand the number of buildings covered by benchmarking requirements, establish energy performance standards for existing buildings, and create a Building Performance Improvement Board.

During my March 5, 2021 "State of the County" address, I stated that if it were not for COVID-19, climate change would have been the natural disaster headline of the year, decade, and century. This was and still is an existential threat to our lives. Our 2018 greenhouse gas inventory in Figure 1 shows that commercial building energy use accounts for 26 percent of community-wide emissions.[1] As described in the County's draft Climate Action Plan released in December 2020, Building Energy Performance Standards (BEPS) are a foundational policy that will directly reduce our community-wide greenhouse gas emissions from the existing built environment and get us one step closer to eliminating greenhouse gas emissions by 2035.[2] Through BEPS requirements and accompanying tools to help them succeed, owners in the County will reduce the climate impacts of their buildings through deep energy retrofits, operational improvements, and tenant engagement.

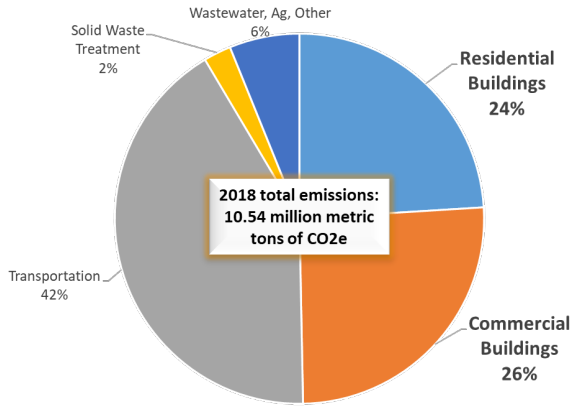


Figure 1. 2018 GHG Emissions

The attached legislation establishes a thoughtful and stakeholder-supported framework of BEPS in Montgomery County, but additional data analyses are required to set aggressive but realistic standards for buildings, which will be accomplished through accompanying regulations. This legislation is strongly

[1] Montgomery County's GHG emissions inventory, 2018. https://www.montgomerycountymd.gov/green/climate/ghg-inventory.html

[2] Institute for Market Transformation. "Building Performance Standards Are A Powerful New Tool in the Fight Against Climate Change." https://www.imt.org/resources/building-performance-standards-are-a-powerful-new-tool-in-the-fight-against-climate-change

supported by the County's Climate Change Coordinator and the Department of Environmental Protection (DEP).

We realize that the current COVID-19 pandemic has presented an unprecedented challenge to residents and businesses in Montgomery County. Our County's climate emergency is another unprecedented challenge that we must tackle—one where a BEPS policy is a key strategy for both reducing greenhouse gas emissions and helping building owners and their tenants become more resilient to economic shocks with energy-efficient buildings. The County strongly supports advancing BEPS at this time to give building owners as much time as possible to strategize for energy-focused building improvements in their long-range capital planning cycles.

Background

Montgomery County was the first county in the nation to adopt a Building Energy Benchmarking law that requires owners of certain commercial buildings to report energy use to the County each year. The County led by example by benchmarking its buildings first by June 2015. The first deadline for private buildings was June 2016.

Several jurisdictions have now implemented "beyond benchmarking" policies that compel building owners to take action to improve their buildings' energy performance in addition to reporting data. BEPS are policies that set a minimum energy performance threshold for buildings, requiring covered buildings to meet or maintain newly established efficiency standards. To date, BEPS policies have been adopted in Washington, D.C., New York City, St. Louis, and Washington state—these jurisdictions are just beginning to implement their policies. **As with energy benchmarking, Montgomery County is poised to become the first county to pass BEPS legislation and join the small group of innovative jurisdictions adopting such a strategy.**

In drafting this legislation, DEP engaged stakeholders in a BEPS workgroup in early 2020 to solicit feedback on the policy framework and elements of the proposed legislation. Stakeholders included representatives from the impacted community including the commercial and multifamily building communities and those that serve them including advocacy and industry groups, utility representatives, energy contractors, and County government staff. DEP was grateful to receive free technical assistance from the Institute for Market Transformation (IMT) to help present policy options, facilitate stakeholder meetings, and provide expert guidance on legislative questions.

Policy Overview

The current Building Energy Benchmarking law covers roughly 100 million square feet of commercial building area and requires County- and privately-owned non-residential buildings 50,000 square feet and greater to benchmark annually. Proposed amendments in this legislation would expand benchmarking to smaller commercial buildings by reducing the square footage threshold from 50,000 to 25,000 square feet, add multifamily residential buildings, and include some previously exempted building types. These modifications will add approximately 1,000 new covered buildings into the benchmarking program, eventually covering roughly 250 million square feet or 85% of commercial and multifamily floor area in the County. Figure 2 below illustrates the buildings that would be covered by the amendments:

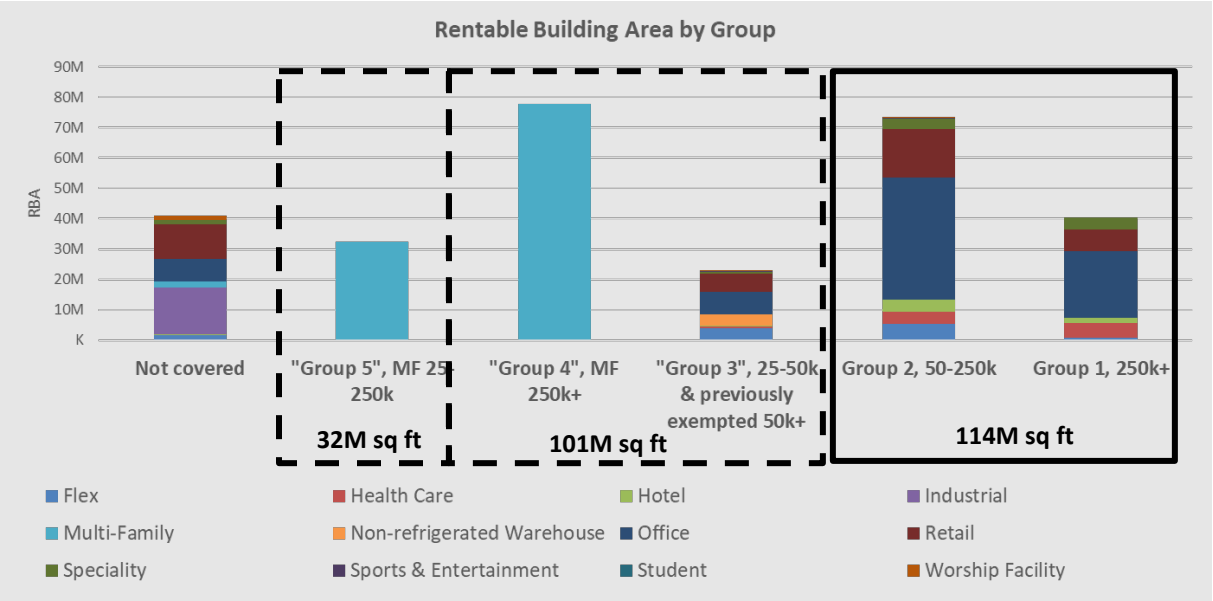


Figure 2. Buildings that would be covered by the amended Benchmarking Law.

Building groups by type and total floor area: Group 1 and 2, in the bold black box, are currently covered by the Energy Benchmarking Law. Groups 3, 4, and 5, in the dotted boxes, would be newly covered under the proposed amendments. Source of Rentable Building Area: CoStar.

Over time, all buildings covered by the Building Energy Benchmarking Law would become subject to Building Energy Performance Standards with a phased approach.

Based on stakeholder input and guidance from IMT, the proposed BEPS policy includes the following elements:

- Long-term performance standards that balance the climate emergency need for immediate action with building owners' need for flexibility in how they manage their buildings. Long-term standards will also give the County time to educate and engage the impacted community;
- Performance standards based on site energy use intensity by building type that measure improvements that are under building owners' and occupants' direct control;
- Full credit for onsite solar generation as a deduction from site energy use in calculating progress towards BEPS;
- Phasing in of newly covered buildings to first familiarize owners with energy benchmarking, reporting, then with building energy performance standards;
- A performance baseline that averages two years with the highest energy use consumption to recognize and credit variability in operations and hold owners harmless for exceptional circumstances stemming from the pandemic or other events outside the owners' control;

- A process by which covered building owners who cannot reasonably meet one or more of the applicable interim or final performance standards due to economic infeasibility or other circumstances beyond the owner's control can submit building performance improvement plans (BPIPs); and
- A building performance improvement board made up of members of the covered community, energy professionals, and advocates who will advise DEP on BEPS implementation, technical review, and complementary programs and policies.

While the proposed legislation outlines the parameters of BEPS and creates a framework, some facets will be set via regulation to be established at a later date. These include:

- Building type groupings with shared characteristics that facilitate the implementation and enforcement of BEPS;
- Numerical performance standards for each building type;
- Required format for BPIPs;
- Parameters for economic feasibility or other factors that will dictate circumstances under which BPIPs will be allowed; and
- Adjustments or assistance specific to under-resourced building sectors, such as affordable housing, small businesses, houses of worship, and non-profits.

Finally, the County is pursuing state-enabling legislation to implement "poor performance payments" beyond the current Class A violations for non-compliant buildings. DEP envisions that these non-compliance payments would be directed to a dedicated fund to support a technical assistance hub and to help under-resourced buildings with BEPS compliance.

Impact

Benchmarking leads to a better understanding of energy trends and performance among building owners and managers and has resulted in energy savings of roughly 2% per year in consistently benchmarked facilities. See the 2019 Energy Benchmarking Report (www.tinyurl.com/2019BBreport) for more information about how benchmarked buildings in the County are performing.

Buildings benchmarked in EPA's ENERGY STAR Portfolio Manager tool that earn the ENERGY STAR label also command higher rental rates, benefit from higher sales prices, and see higher occupancy rates—all of which indicate a building that is more economically resilient than non-ENERGY STAR labeled buildings—as shown in Figure 3 below:

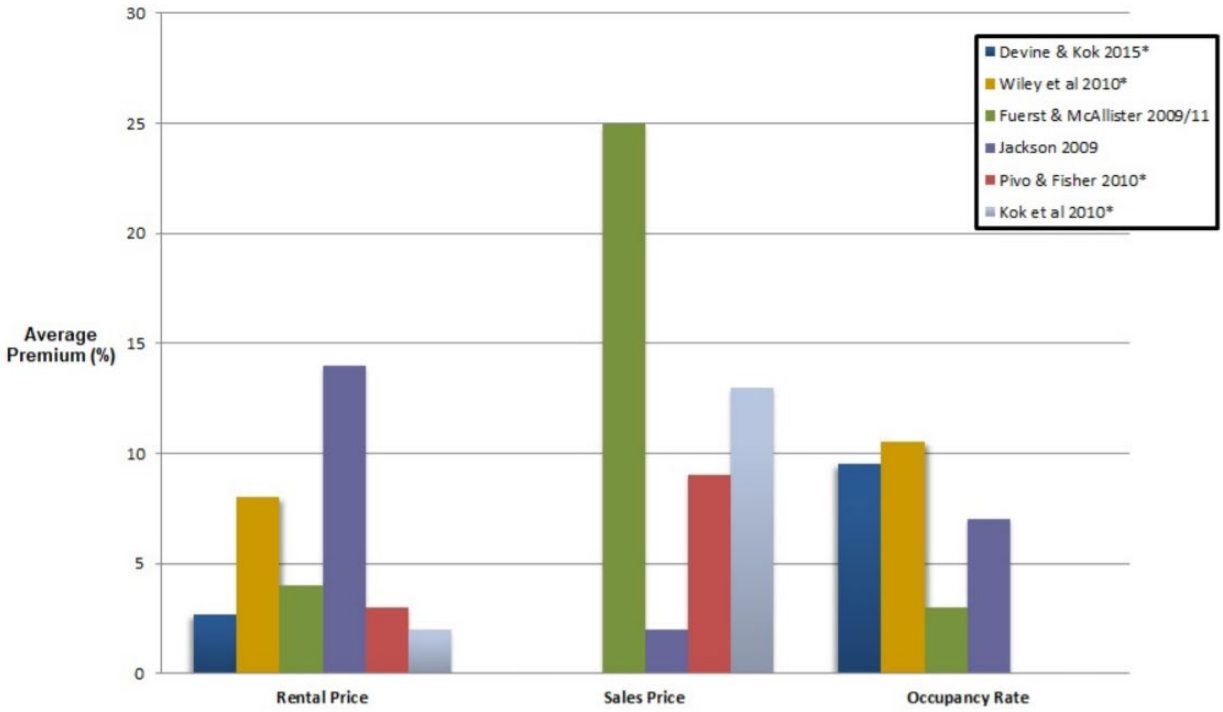


Figure 3. Added Value of ENERGY STAR-Labeled Commercial Buildings in the U.S. Market. Source: Institute for Market Transformation, 2016.

Despite these modest efficiency gains through benchmarking, existing commercial buildings account for roughly one quarter of Montgomery County community-wide greenhouse gas emissions. Existing policies fall short in their ability to drive the major efficiency improvements and GHG reductions that are needed from buildings to achieve the County's climate goals. Achieving these ambitious goals requires swift and decisive action, especially considering that between now and 2035, there may only be one opportunity to replace most equipment at the end of its useful life. While many jurisdictions like Montgomery County have enacted ambitious green building codes for new construction, similar mandates for existing buildings are needed to achieve climate targets. Requiring energy improvements to the commercial building sector will result in greenhouse gas emission reductions from the built environment.

BEPS is also expected to produce many co-benefits:[3] reduced utility and operating costs for building owners and tenants; improved, more resilient, and higher-value building stock in the County;

[3] U.S. Environmental Protection Agency. "Quantifying the Multiple Benefits of Energy Efficiency and Renewable Energy: A Guide for State and Local Governments." https://www.epa.gov/statelocalenergy/quantifying-multiple-benefits-energy-efficiency-and-renewable-energy-guide-state

improved human health from better indoor air quality and reduced air pollution; and increased local economic activity and green jobs related to building design, construction, energy efficiency, and other trades related to the building upgrade market.[4]

DEP has contracted Steven Winter Associates to undertake comprehensive data analysis on the magnitude of energy savings and greenhouse gas emission reductions achievable via BEPS, as well as a cost-benefit analysis of BEPS implementation. This analysis will be completed in summer 2021.

Resources

Along with new performance requirements, DEP plans to provide additional resources to support building owners and managers in understanding the requirements of BEPS and identifying energy improvements in their buildings. Washington, D.C. has launched a Building Innovation Hub (https://buildinginnovationhub.org) to support DC's BEPS program. The Hub aims to meet the current needs of the building industry while simultaneously helping the industry put in place the innovative solutions needed to build and operate high-performing buildings. DEP has had initial conversations to coordinate with the Hub and DC on leveraging existing resources and expanding the Hub to serve a regional audience. This expansion will be especially helpful for owners with properties in both jurisdictions.

Additionally, as BEPS will cover regulated and non-regulated affordable housing buildings, small businesses, houses of worship, and non-profits, DEP is exploring additional technical assistance and support for under-resourced building sectors.

To implement BEPS and serve the building community, the accompanying Fiscal Impact Statement estimates that the legislation would require four additional staff members to undertake outreach and education, provide technical plan review, and support program implementation. Operating expenses are also identified for technical assistance hub for building owners, support for data and engineering analyses, database development, and outreach materials.

Timing

To keep with the schedule proposed in the legislation, newly covered Group 3 & 4 buildings (commercial buildings 25k-50k square feet and multifamily buildings 250,000+ square feet) must begin benchmarking and report calendar year 2021 data by June 1, 2022. DEP plans to begin outreach to the new covered building community as soon as this legislation is enacted.

In advance of beginning BEPS on January 1, 2023, DEP will set a BEPS baseline performance for each building in Groups 1 and 2 by averaging that building's 2 years with the highest normalized net site EUI between calendar year 2018 and calendar year 2021. Groups 1 and 2 consist of buildings covered by the current Benchmarking law (County-owned and private commercial buildings 50,000 gross square feet and larger). Buildings in Groups 1 and 2 will be required to meet the first interim standard by December 31, 2026. Prior to 2023, DEP will also employ an objective formula to set two interim standards for each building. Figure 4 below visualizes the benchmarking and BEPS timing in the legislation:

[4] American Council for an Energy-Efficient Economy Fact Sheet. "How Does Energy Efficiency Create Jobs?" https://www.aceee.org/files/pdf/fact-sheet/ee-job-creation.pdf

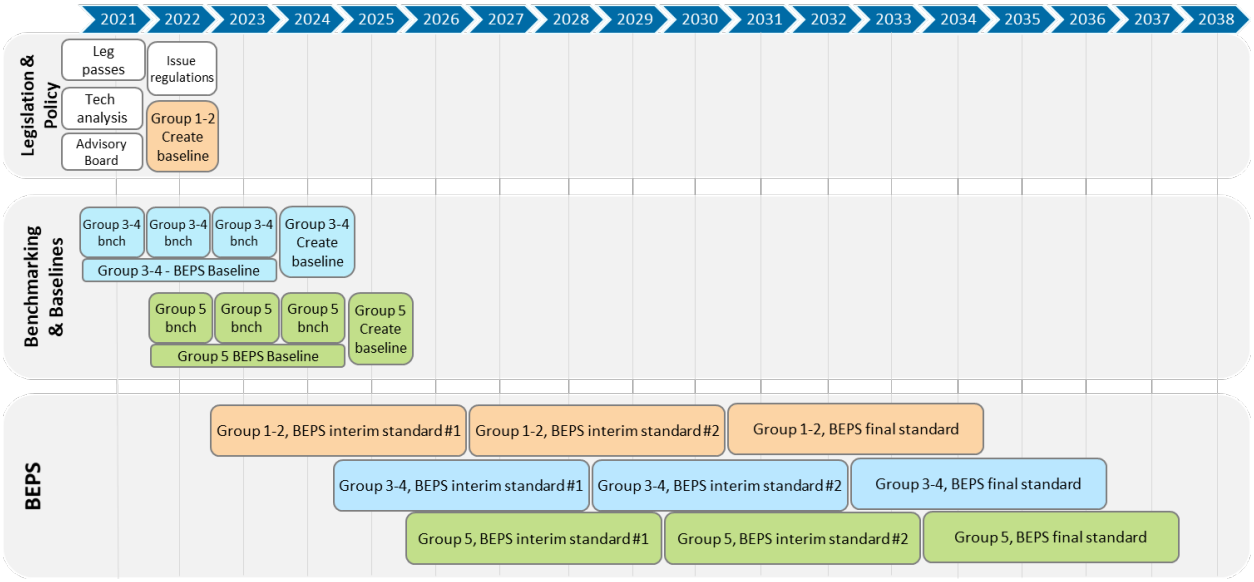


Figure 4. Proposed BEPS timeline.

Under the timeline proposed in the bill, the County Executive will issue Method (2) regulations establishing building types, final performance standards for each building type, and other details no later than June 1, 2022.

Modifications to the proposed timeline or delays in bill adoption may result in delays to phasing in building groups, creating standards, or forming the building performance improvement board, reducing the climate benefits of BEPS.

If you have any questions, please contact Stan Edwards in the Department of Environmental Protection at 240-777-7748 or stan.edwards@montgomerycountymd.gov.

Fiscal Impact Statement

Bill XX-21 – Environmental Sustainability – Building Energy Use Benchmarking and Performance Standards

1. **Legislative Summary.**

   Bill XX-21 amends the Environmental Sustainability Chapter of County Code to expand the buildings required to report under the benchmarking law and creates a new Building Energy Performance Standards (BEPS) program. Specifically, the bill:

   a. expands the number of buildings covered by energy benchmarking requirements,
   b. establishes BEPS for existing buildings,
   c. provides for enforcement of BEPS by listing a violation as a Class A violation,
   d. provides for use of Building Performance Improvement Plans to assist building owners who are not able to meet the requirements of Bill XX-21, and
   e. creates a Building Performance Improvement Board to advice on the implementation of the program.

2. **An estimate of changes in County revenues and expenditures regardless of whether the revenues or expenditures are assumed in the recommended or approved budget. Includes source of information, assumptions, and methodologies used.**

   Bill XX-21 is not expected to have an impact on County revenues.

   The legislation will have an impact on expenditures to create and implement a new initiative, BEPS. These estimates were developed after discussions with Washington, DC, and St. Louis, who both have benchmarking programs and are implementing BEPS. The fiscal impact statements for BEPS policies in both jurisdictions are included as attachments.

   It is estimated that up to seven total positions would be needed to run the program, three of which are in the existing complement (one vacant). Only one new position would be needed upon enactment (assumed to be in FY22), two new positions would be needed in FY23, and one would be needed in either FY23 or FY24:

   - **Manager III**: Currently oversees commercial and residential energy programs for the Department of Environmental Protection, BEPS would be added to its purview.
   - **Program Manager I** (Grade 23): Currently manages and enforces the existing Benchmarking Law; the number of buildings that will have to report will more than double under Bill XX-21, from about 800 to 1,800 buildings.
   - **Program Manager II** (Grade 25) (vacant, to be filled in FY22): Oversee the program, its implementation, craft BEPS regulations, advise on policy and data analysis, and manage program staff.
   - **New – Program Manager I** (Grade 23, $100,445) (FY22): Work with multifamily and affordable housing building owners and managers to meet the benchmarking and BEPS requirements and be a resource for the sectors.
   - **New – Program Manager I** (Grade 23, $100,445) (FY23): Engage with stakeholders (from building/business owners to industry groups to advocacy groups) on BEPS through trainings, meetings, developing materials, and maintaining partnerships.

- **New – Program Specialist II** (Grade 21, $92,728) (FY23): Provide administrative support to the BEPS and benchmarking programs by responding to inquiries from the building owners and industry groups, staffing the helpdesk, logging correspondence, and assisting with citation processing.
- **New – Senior Engineer** (Grade 27, $118,299) (FY23 or FY24): Provide expert guidance to building owners on upgrade projects, technical expertise, and for technical review of Building Performance Improvement Plans.

The total annual personnel cost of the new positions outlined above is estimated to be $411,917 when the phase-in is complete. In addition to staffing needs, the legislation would require operating expenses as well:

- **Database Development, Support, and Maintenance**, $80,000 (FY22): The program will require a database to track benchmark data, performance metrics, contact information, and a portal for building owners to engage with the benchmarks/BEPS requirements (off the shelf product is available specifically developed for benchmarking).
- **General Outreach**, $100,000 (FY22): materials and mailings, general program support, supplies, and website.
- **Technical Assistance Hub**, $500,000 ($250,000 in FY23, $250,000 in FY24): Provide a technical assistance resource for property owners in complying with BEPS, likely contracting with an entity that currently performs this activity in Washington, DC.
- **Support for Data and Engineering Analysis**, $100,000 (FY24): The level of engineering analysis needed to implement BEPS and evaluate Improvement Plans will likely require additional outside expertise.

Operating expenses total $780,000 per-year when the phase-in is complete. Combined with the personnel costs, total program costs are $1,191,917 per year.

3. Revenue and expenditure estimates covering at least the next 6 fiscal years.

The table below shows the fiscal impact of Bill XX-21 from FY21 through FY26 following the implementation schedule outlined in Question 2. The FY21 costs are estimated at $0 for the length of time it would take to pass Bill XX-21 and then create, recruit, and fill the new positions. When fully implemented in FY24, the cost of the legislation is expected to be $1.2 million annually.

	FY21	FY22	FY23	FY24	FY25	FY26
Personnel Costs	$0	$75,643	$334,627	$411,917	$411,917	$411,917
Operating Expenses	$0	$180,000	$430,000	$780,000	$780,000	$780,000
Total	$0	$255,643	$764,627	$1,191,917	$1,191,917	$1,191,917

4. An actuarial analysis through the entire amortization period for each bill that would affect retiree pension or group insurance costs.

Not applicable.

5. An estimate of expenditures related to County's information technology (IT) systems, including Enterprise Resource Planning (ERP) systems.

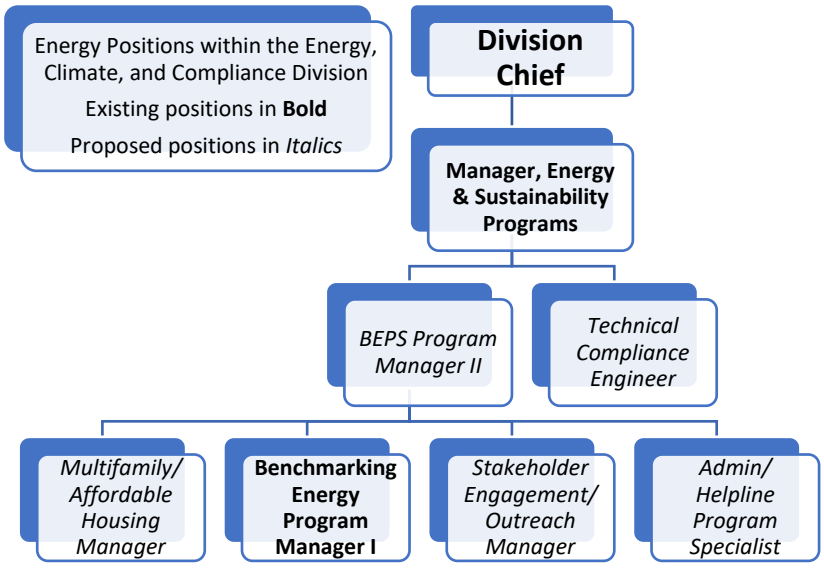
Not applicable.

6. **Later actions that may affect future revenue and expenditures if the bill authorizes future spending.**

   None.

7. **An estimate of the staff time needed to implement the bill.**

   The responsibilities under Bill XX-21 constitute a new program and cannot be absorbed within the existing complement. Multiple full-time positions would be needed to fully implement Bill XX-21, as outlined in Question 2. Below is an organizational chart showing how the program would be set up:



8. **An explanation of how the addition of new staff responsibilities would affect other duties.**

   Bill XX-21 expands the number of buildings that must report under the Benchmarking law and creates the BEPS program under the Department of Environmental Protection, and the workload would necessitate new positions if enacted. There are three existing positions that offset the need for staff, but the workload cannot otherwise be absorbed within the existing complement.

9. **An estimate of costs when an additional appropriation is needed.**

   New appropriation would be needed in FY22, FY23, and FY24 to fund the additional staffing and operating costs outlined in this Fiscal Impact Statement.

10. **A description of any variable that could affect revenue and cost estimates.**

    The revenue or cost estimates of this bill may be impacted by the following variables:

    - The number of buildings covered by this bill – if the number of buildings covered by BEPS changes, staff and expenditures would also change.
    - Energy performance improvements in buildings may negatively impact the fuel energy tax revenues.
    - Improved building stock may increase building assessed value, rents, and increase property tax revenues.

11. Ranges of revenue or expenditures that are uncertain or difficult to project.

The variables outlined in Question 10 are difficult to translate into a range of estimates – it is unknown how many more buildings would be needed to be covered under the law before a new position is required, for example. It is similarly difficult to project how fuel energy tax revenue may be impacted by improved energy efficiency.

12. If a bill is likely to have no fiscal impact, why that is the case.

Not applicable.

13. Other fiscal impacts or comments.

None.

14. The following contributed to and concurred with this analysis:

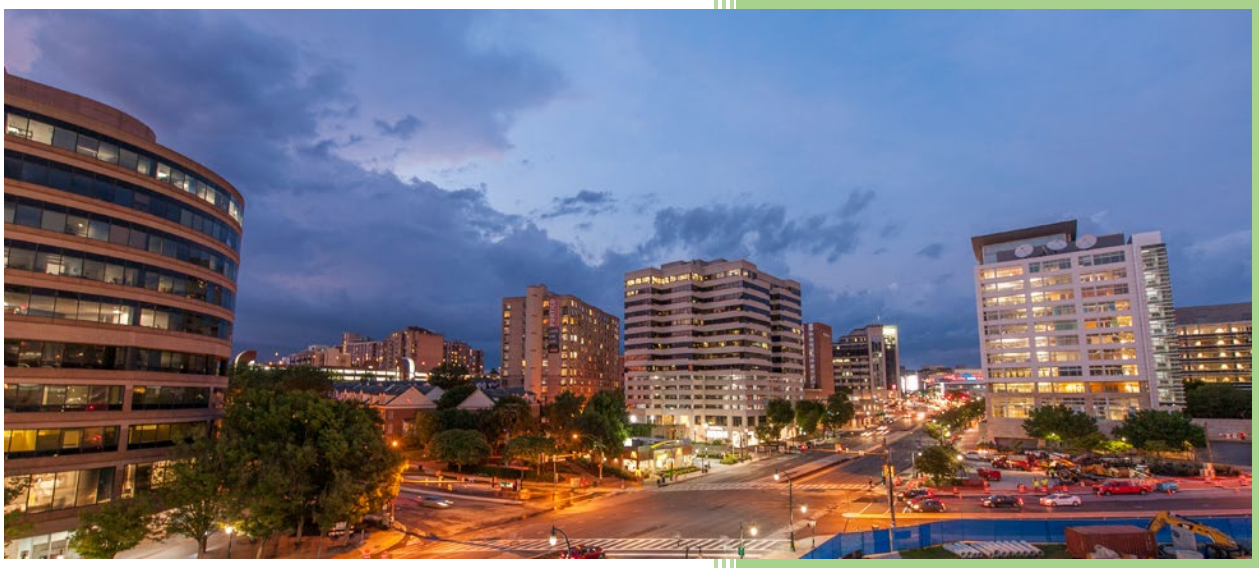
Stan Edwards, Department of Environmental Protection
Lindsey Shaw, Department of Environmental Protection
Emily Curley, Department of Environmental Protection
Richard H. Harris, Office of Management and Budget

Joshua Watters for JRB *3/26/21*

Jennifer Bryant, Director
Office of Management and Budget

Date

Stakeholder Recommendation Report



Building Energy Performance Standards in Montgomery County, MD

Compiled by Montgomery County's
Department of Environmental Protection
September 2020

Contents

Executive Summary

This report details recommendations developed by key stakeholders - including the commercial and multifamily building communities and those that serve them including advocacy groups, utilities, energy contractors, and County government representatives - for building energy performance standards, or BEPS, in Montgomery County. BEPS is a policy that sets minimum energy performance thresholds for existing buildings. BEPS goes beyond the County's existing Benchmarking Law and requires building owners to actively improve the energy performance of their buildings over time.

During the stakeholder work session meetings, attendees reviewed building performance policy models adopted by other jurisdictions, including Washington, DC, New York City, and St. Louis, and developed recommendations on a BEPS policy that balances the challenges of a climate emergency with the realities of the County's varied building stock. As this report details, the stakeholders believe this recommended approach will both reduce the climate impact from the built environment and help Montgomery County become the first county in the nation with a BEPS policy.

When this series of work session meetings launched, no one envisioned a global health pandemic occurring, but even as the commercial and multifamily building sectors experienced pandemic-related challenges, the stakeholders continued to meet virtually to prepare recommendations. These recommendations detail how the built environment can improve economic and climate resiliency for private building owners, their tenants, and the County.

As a result of the continued economic fallout from COVID-19, residents, businesses, and housing providers are facing an extended period of economic pain and uncertainty. COVID-19 will inevitably prompt changes to buildings, how they are used, and how they are operated. Those changes could make buildings less or more climate-friendly and result in higher or lower operating costs. Investments in building efficiency will lower utility and other operating costs, keeping money in the county, increasing the value of buildings, and creating much needed jobs. While we are in the midst of unprecedented disruption today, the BEPS policy model outlined below would create a long-term standard with the first interim target more than five years from now. Implementing a long-term BEPS policy now with a long-term and transparent roadmap towards implementation offers a level of certainty during a generally uncertain time and will drive job- and value-creating private investments in private buildings to accelerate the county's economic recovery.

Not only will a BEPS policy in Montgomery County offer long-range expectations for building owners to improve their buildings with guidance and assistance from local government, but it will provide maximum flexibility for owners to choose when and how to improve their buildings, create a tool for the actors in the built environment to collaborate and innovate, encourage financial stability through lower energy bills, and create energy-efficiency jobs at every skill level. The stakeholders look forward to continued conversations with the Montgomery County Government and Council on this important issue.

Background

Montgomery County, Maryland is home to more than 5,000 commercial and multifamily properties covering more than 288 million square feet of rentable building area. The county's commercial building stock is primarily made up of office, multifamily, and retail buildings (by total number and rentable square footage).[1] Commercial buildings also account for 26 percent of greenhouse gas (GHG) emissions in Montgomery County.[2]

In May 2014, Montgomery County became the first county in the nation to establish a building benchmarking and transparency program. This requires certain County-owned and private non-residential buildings that are 50,000 square feet and greater to annually track and report building and energy performance details to Montgomery County's Department of Environmental Protection (DEP). As of June 2020, the County's Benchmarking Law covers over 100 million gross square feet of commercial building area across about 700 properties.

For benchmarked buildings, monitoring energy data and disclosing data publicly can reduce energy use in buildings through behavioral and low-effort operational changes. An October 2012 analysis by the U.S. EPA of 35,000 benchmarked buildings found an average annual energy savings of 2.4 percent, and buildings that benchmarked for three straight years saved an average of 7 percent over the course of that time.[3] County benchmarking data supports these findings. Buildings that had reported consistently between 2016 and 2019 showed an average decrease of 2% a year, or 6% total reduction in weather-normalized site energy use intensity between 2016 and 2019.[4]

Benchmarking improves our understanding of energy consumption patterns; helps identify energy saving opportunities within a portfolio of buildings; and helps a business manage its bottom line through consistent data collection and tracking. Benchmarking programs also provide foundational information for local government to develop and offer improved energy policies and programs.

However, to meet Montgomery County's ambitious climate emergency goals, the built environment will need to improve performance beyond the nominal energy savings realized through benchmarking and transparency policies. Jurisdictions that implement successful benchmarking programs look to leverage that success into "beyond benchmarking"-type policies, which typically include prescriptive requirements (e.g., energy audits, retro-commissioning) or performance requirements (e.g., meeting an improved energy performance over time).

Building Energy Performance Standards

Building Energy Performance Standards establish performance levels for buildings and drive all buildings that BEPS covers to achieve these levels in the long-term with required progress at regular intervals in

[1] Source: CoStar Commercial Real Estate Information Company. Data accessed Jan 2020.
[2] Source: MWCOG County-wide Greenhouse Gas Emissions Inventory. 2018 data.
[3] Source: U.S. Environmental Protection Agency. DataTrends: Benchmarking and Energy Savings. October 2012. https://www.energystar.gov/buildings/tools-and-resources/datatrends-benchmarking-and-energy-savings
[4] Includes 309 public, private, and special not-covered (MCPS and Montgomery College) properties that reported benchmarking data consistently each year from 2016 to 2019.

the interim. When developing a BEPS, the Institute for Market Transformation (IMT) recommends that the policy is developed with key guiding principles in mind, including:

- Aligning with goals for climate, social and racial equity
- Providing regulatory fairness
- Creating Jobs and economic growth
- Maximizing certainty, transparency, and clarity
- Balancing flexibility and immediate action

From a building owner perspective, a long-term BEPS provides flexibility: owners can use whatever technologies and operational strategies they decide are most effective and economical to meet the standards. The combination of short- and long-term milestones assures that building performance improves consistently over time, and also sends appropriate market signals to discourage investments in long-lived, inefficient, and environmentally damaging technologies. In parallel, the County will collect data and work with the private sector, utilities, and others to create incentives, programs, and technical assistance.

Given that BEPS are relatively new to policy makers and the market, building performance policies may need to adapt and change over time. The goal for BEPS should be to give the market certainty so it can operate efficiently, minimize burden, and balance complexity of implementation.

Work Session Meetings

In January 2020, DEP held a kick-off meeting for key stakeholders interested in developing recommendations for a BEPS policy for public and private buildings in Montgomery County. Participants included individuals who were previously involved in DEP-led stakeholder work groups related to the County's benchmarking law and development of a County-level Green Bank, as well as key stakeholders and advocates in other sectors such as affordable multifamily housing. Organizations that agreed to be recognized for their participation in the work group process are acknowledged in Appendix A.

The stakeholders developed recommendations through a series of five meetings over the course of five months. Meeting times and information, agendas, notes, webinar recordings[5], and working drafts of this stakeholder report were distributed by DEP. The work session members met via webinar in mid May 2020 to review the recommendations report; comments from this process have been incorporated into this final draft. Please note that participation in the process does not imply full stakeholder endorsement of any particular recommendation.

Montgomery County Government staff are incredibly grateful for the time, energy, and expertise the stakeholder work group provided during this process. Stakeholders not only brought their knowledge of the commercial and multifamily building sector but kept the goals of reducing GHG emissions and involving other building owners in the energy conversation at the forefront of each discussion. The work group members have contributed to an innovative proposal that meets the spirit of the County's declared climate emergency.

[5] See Appendix B for links to agendas, notes, and webinar recordings.

City Energy Project Support

In pursuing building energy performance standards, Montgomery County was one of four jurisdictions selected for the 2020 cohort of the City Energy Project, a national initiative from IMT and Natural Resources Defense Council that supports innovative, practical solutions that cut energy waste, boost local economies, and reduce harmful pollution. Over the past six years, the pioneering cities and counties in the City Energy Project have leveraged the technical and strategic support of the project and its network to design and implement locally tailored building performance solutions to maximize local returns and benefits. The City Energy Project is funded by a partnership of Bloomberg Philanthropies, the Doris Duke Charitable Foundation, and The Kresge Foundation.

In Montgomery County, the City Energy Project technical support team is assisting in the development and implementation of the first-ever BEPS policy at the county level. Staff from IMT directly supported the stakeholder work session meetings through in-depth technical knowledge of BEPS programs, policy considerations and development, and meeting logistics planning. Throughout the work sessions, the stakeholders felt that the technical support received from IMT and the City Energy Project were invaluable, keeping the meeting topics focused and covering an extensive amount of materials in an efficient manner.

Building Performance Standards in Other Jurisdictions

While Building Performance Standard policies are relatively new, a handful of jurisdictions across the country have adopted local performance standards for existing buildings. During the work session discussions, the stakeholders reviewed the elements of other jurisdictions' policies to inform a BEPS policy for Montgomery County, including various metrics, minimum performance of buildings, buildings to be covered under the policy, compliance cycles, reporting processes, and equity considerations.

These policies include:

- **Maryland State Building Energy Performance Standards and Greenhouse Gas Emissions Reduction Targets** *(HB 1490, Environment)*
  During the 2020 Maryland General Assembly, Bill 1490 was introduced in the House, but did not advance by the conclusion of the pandemic-shortened session. If passed as introduced, this Bill would have required buildings 25,000 square feet and greater to report GHG emissions data annually and eventually meet to-be-developed 5-year GHG emission reduction targets such that all covered buildings would achieve a 40% reduction in GHG emissions by 2030, and 80% by 2050. The Bill proposed using current average median GHG emissions as a baseline metric for different building categories (e.g., commercial, multifamily, industrial). The Bill allowed for certain exemption criteria, but compliance with the performance standards could not have been waived for a period of more than three years. Some allowances for green power/renewable energy certificate (REC) purchases to help building owners meet their targets were also provided. The Bill would have established a four-year-limited Building Energy Performance Task Force that would make recommendations on regulations, program development to reduce building GHGs, and guidance for historic buildings. Qualifying owners of covered buildings would have been able to access an incentive/financial assistance program to be developed by the

Maryland Energy Administration. While the stakeholders and County staff believe this Bill would have been be a good step towards achieving the state's climate mitigation goals, the County's BEPS policy recommendations propose different metrics, more detailed property types, and a long-range trajectory for building owners to comply with the target.

- **Washington, DC Clean Energy DC Omnibus Act of 2018**
  Unanimously approved by the DC Council in December 2018 and signed into law by Mayor Bowser in January 2019, the Act includes the first ever building energy performance standards. The District will group buildings into building types and set a separate minimum energy efficiency standard no lower than the median performance level for each building type. Standards will be set by January 2021 and will expressed as ENERGY STAR scores for building types eligible for ENERGY STAR scores. Under BEPS, all existing buildings over 50,000 square feet will be required to reach minimum levels of energy efficiency or deliver savings by 2026 with the compliance cycle repeating every six years and with progressively smaller buildings phasing into compliance over the following years. The Mayor has appointed members to a "Building Energy Performance Task Force" which guides rulemaking and implementation and proposes complimentary programs and policies. The Act increased surcharges on building energy consumption and set aside $3 million per year for the proceeds to assist affordable and rent controlled housing in complying with BEPS.

- **New York City Carbon Mobilization Act (Local Law 97 of 2019)**
  Adopted in April 2019, the Law defined building types and created greenhouse gas intensity caps for each type. It requires buildings over 25,000 square feet to cut their greenhouse gas emissions by 40 percent by 2030 and 80 percent by 2050. It phases in caps on greenhouse gas emissions starting in 2024 when the buildings with the highest emissions (roughly 20 percent of buildings) will need to make improvements to comply. Starting in 2030, intensity limits will fall and about 75 percent of buildings will have to make improvements. Emissions caps will fall again in 2035, 2040 and by 2050. A critical question to be answered going forward will be how much building owners will be allowed to purchase renewable electricity produced in the city or directly connected to it to substitute for efficiency improvements to their buildings. Instead of complying with the caps, certain building types may opt for lower-cost prescribed energy-saving measures, such as insulating pipes and installing thermostats to control radiators. These buildings include houses of worship and multifamily buildings with rent-regulated units and other types of affordable housing. The city will evaluate in the next couple years 1) whether to permit owners of buildings that do not use all of their emission caps to sell unused emissions permits to buildings that exceed their caps ("carbon trading") and 2) whether to permit building owners to opt to use time of use electricity-to-emissions conversion factors as a way to encourage that electricity usage be shifted from peak to off-peak times. Buildings that exceed their caps will be subject to annual fines of $268 per ton of carbon dioxide equivalent in excess of the cap. The Mayor's Office of Sustainability estimates that the bill will create 23,700 new green jobs by 2030.

- **State of Washington Clean Buildings Act (House Bill 1257)**
  Signed by Governor Jay Inslee on May 7, 2019, the Clean Buildings Act requires Washington's Commerce Department to adopt rules that "seek to maximize reductions of greenhouse gas emissions from the building sector." The Department will use a consensus technical standard as a starting point for rulemaking. Rules will be issued starting in 2020 and will include the following:
    a) Set a state energy performance standard target for each building type by 2020. The targets will be measured in site energy consumed per square foot of the building (otherwise known as site energy use intensity or EUI). Purchases of offsite renewables will not impact buildings' EUIs. The EUI targets must be updated in 2029 and every five years thereafter.
    b) Develop "conditional compliance methods" including for building owners to 1) adopt an implementation plan to meet each building's EUI target or 2) commission an energy audit and implement all energy-saving measures predicted to save more money than they will cost. Covered buildings will be required to achieve their EUI targets or to comply with the Act conditionally. Buildings over 220,000 square feet of commercial space will have to do so by 2026; buildings over 50,000 square feet of commercial space will have until 2028.

  Residential buildings that do not contain commercial space will not be subject to the law. To prime the pump on compliance, the Act rewards building owners who improve the energy efficiency of their buildings early. Starting July 1, 2021 through a year before their buildings are subject to their BEPS, building owners may apply for a utility rebate of $0.85 per square foot of conditioned floor area to comply early with the Energy Standard. The Act authorizes a total of $75 million for these rebates.

- **St. Louis, MO Building Energy Performance Standard (Ordinance 71132)**
  In April 2020, the St. Louis Board of Aldermen voted unanimously to adopt the Midwest's first Building Energy Performance Standard bill and the fourth such law in the nation. The ordinance covers municipal, commercial, institutional and residential buildings 50,000 square feet and larger. The City will set a standard for each property type based on three years of local benchmarking data, 2017-2019. The standards will be set so that at least 65% of the buildings of a property type will need to improve performance. Building owners will have the flexibility to decide what combination of physical or operational improvements can best achieve the standard and will have until 2025 to reduce their energy use to comply (a four-year compliance period). To ensure that reductions in building energy use grow over time, the City will set new standards by 2026 and will repeat the process every five years. To accommodate additional challenges including access to capital, affordable housing and houses of worship will be subject to a six-year compliance period. To encourage future building electrification, St. Louis' standards will be expressed in site Energy Use Intensity (site EUI). Offsite renewable electricity will not influence compliance with the standards. The Mayor will appoint a "Building Energy Improvement Board" of private experts and stakeholders which will have a key role in implementing the BPS, based on the success of a similar board the Division operates for building code implementation. Rather than relying on lists of prescriptive measures, the Board enables

the city to approve custom compliance paths that take into consideration the unique conditions of each building.

Table 1: Summary of Building Performance Standards in Other Jurisdictions

	Washington, DC	New York City	Washington State	St. Louis, MO
Minimum Threshold Performance	TBD, at least median ENERGY STAR score (or equivalent) by building group	CO2e emissions limits on a sq. ft. basis by building type	TBD, based on site EUI	Standards set no lower than 65th percentile site EUI by property type
Covered Buildings	Commercial and multifamily > 10K sq. ft.	Commercial and multifamily > 25K sq. ft.	Commercial > 50K sq. ft.	Commercial and multifamily > 50K sq. ft.
Compliance Cycle	Every 5 years	Must meet limits annually, limits get stricter every ~5 years	Every 5 years	Every 4 years
Equity	Adds $3 million per year to assist affordable and rent controlled housing comply	Houses of worship and affordable and rent-regulated housing have alternative option of lighter prescriptive improvements	$70 million in funding for utilities to assist building owners who comply early	Houses of worship and affordable and housing on a six-year compliance cycle
Adjustments	Agency may grant extensions up to three years and approve alternative compliance plans	Agency may make adjustments and approve alternative compliance plans under defined circumstances	TBD through rulemaking	Agency with advice of advisory board may approve alternative compliance plans
Advisory Board	Yes, specific requirements for representation	Yes, specific requirements for representation	No	Yes, specific requirements for representation

In addition to the jurisdictions listed above, Boston, MA; Cambridge, MA; and Los Angeles, CA are considering Building Performance Standard policies. Legislation and/or policy proposals are not readily available for these localities.

Recommendations on BEPS in Montgomery County

In fall 2019, the County expressed interest in pursuing BEPS for Montgomery County buildings as part of its ambitious climate goals of 80% reduction in GHG emissions by 2027 and zero GHG emissions by 2035 from a 2005 baseline. Below are the elements of a County BEPS policy discussed by the stakeholders:

Recommended Policy Model

The main drivers of reducing greenhouse gas emissions among the commercial building sector are reducing energy consumption, using energy more efficiently, and using energy generated from cleaner sources. The electricity supplied to the County is getting cleaner as the grid adds more renewable sources, but still has a long way to go. Fifty-six percent of the electricity consumed in Maryland is generated by fossil fuels.[6] Therefore, reducing energy use through efficiency is critical to mitigating climate change now.

At the same time, the commercial building sector needs market certainty so that business decisions can be made with the best information available in order to leverage investments and minimize the burden to businesses. As they manage the complexity of implementation, building owners and managers will need the flexibility to select the strategies and investments that make the best business sense while moving towards long-term and lasting efficiency. Achieving carbon neutrality will require large investments in the performance of buildings over 20+ years.

Given these realities, stakeholders favored a BEPS policy model that sets a long-term performance standard with five-year interim performance targets to make sure buildings are on track to meet the final standard. This "trajectory approach" would:

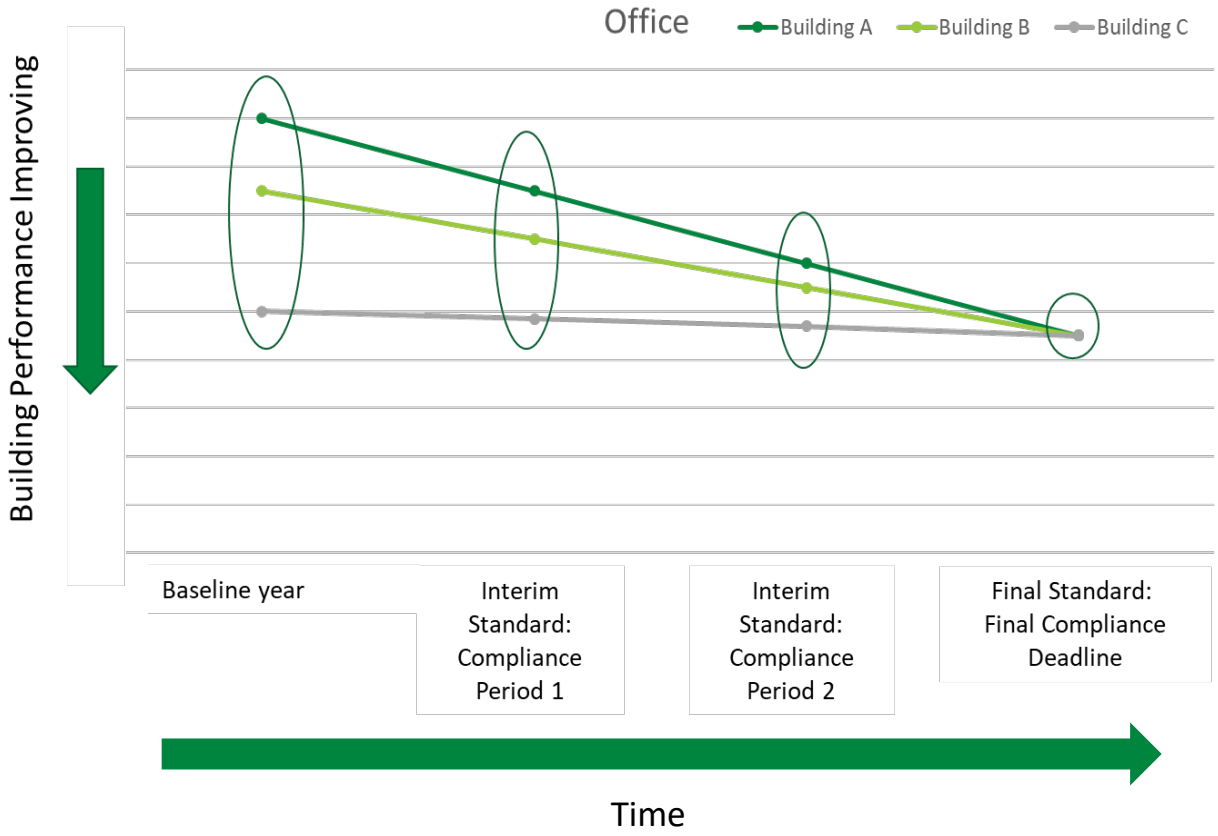
- Be closely tied to County's climate commitment
- Enable long-term planning for major upgrades
- Encourage early action to meet interim targets and prevent owners from delaying action
- Allow for flexibility related to the interim targets on the way to the long-term standard
- Require the best-performing buildings to maintain performance over time

This model recognizes that improvements sooner rather than later produce greater climate benefits, but large investments make the most sense in certain situations (e.g., at time of major equipment replacement, tenant turnover, refinancing). Long-term standards provide more certainty so owners can plan for the long term and make building improvements at the most favorable times accounting for the building life cycle, financing cycles, and leasing cycles.

Meanwhile, the interim performance target of five years is based on a typical capital planning cycle. Similarly, BEPS policies in other jurisdictions are generally carried out on a five-year cycle to match capital planning cycles. Most county stakeholders agreed that they too use a five-year capital planning cycle. Interim targets allow for concrete planning, budgeting, implementation, and demonstrated progress toward performance standards.

[6] Source: U.S. Environmental Protection Agency. Power Profiler, RFCE Emission Rates. https://www.epa.gov/energy/power-profiler#/RFCE

Chart 1: BEPS Trajectory Model



"Trajectory model": County draws a straight line from each building's initial performance in a base year to its required terminal standards and sets interim targets for all buildings at intervals of 5 years.

Recommended Efficiency Metric

Several metrics are available to measure efficiency and could be used as the measurement for improved building performance. Stakeholders most favored a site energy use intensity (site EUI). Site EUI measures actual, annual energy use at the site (in kBtu) per gross square foot of building area. Site EUI enables comparisons between different sized buildings.

The stakeholder group favored site EUI because it measures energy consumption directly controlled by the building owner, as opposed to metrics such as greenhouse gas emissions that include factors outside building owners' control. Building owners held to a performance requirement would be responsible for in-building systems, regardless of how the energy is delivered to the building systems. Site EUI is easily understood by building owners and managers, as it is calculated directly from utility bills and floor area. However, site EUI does not directly link to carbon goals and different fuel mixes significantly affect the carbon intensity of a building with a given site EUI.

Other metrics such as ENERGY STAR score or source EUI factor in the total amount of all the raw fuel required to operate a property, including losses that take place during generation, transmission, and distribution of electricity; these factors are generally out of the building operators' control. Further grid

decarbonization will be addressed by state renewable portfolio standard policies and utility improvements to the grid.

Setting standards using site EUI as the metric incentivizes efficient use of electricity. Electricity has a higher site-to-source conversion ratio which negatively impacts a building's ENERGY STAR score and source EUI. In coordination with decarbonization and modernization of the grid, building electrification can support efficiency goals and be helpful for overall future GHG reduction.

In addition to controlling for square footage in order to compare buildings, several other conditions influence site energy use and therefore should be normalized over performance cycles. Factors such as weather, occupancy, and operational factors (depending on the building type) should be considered and normalized for wherever possible. Buildings that are densely occupied or commercial buildings that are in use 24/7 typically use more energy and therefore have a higher EUI. These factors should be considered through normalization where practical to enable an apples-to-apples comparison among buildings.

ENERGY STAR Portfolio Manager, the tool used for annual energy benchmarking and reporting by covered buildings, requires the input of many of these operational factors. Portfolio Manager can provide a "weather-normalized site EUI" value which calculates the energy a property would have consumed during 30-year average weather conditions. For example, if 2019 was a very hot year, then the weather normalized site EUI may be lower than actual site EUI because the building would have used less energy were it not so hot – a factor outside of the building operator's control.

Portfolio Manager also provides a "site EUI (adjusted to current time period)." This metric, only available for properties that are eligible to receive a 1-100 ENERGY STAR score[7], allows for an apples-to-apples comparison that normalizes for differences in weather and the operating conditions of the building. For a given 12-month period, this metric reflects the site energy the property would be expected to consume when operating under normal conditions (weather, hours, occupants, etc.).

The County must determine how to deal with buildings that cannot obtain metrics normalized by ENERGY STAR Portfolio Manager. Based on 2018 and preliminary 2019 energy benchmarking submissions, roughly 65% of reported properties have 1-100 ENERGY STAR scores calculated as part of their annual energy reporting. This leaves a substantial portion of properties that will not be provided normalized site EUI values by ENERGY STAR Portfolio Manager.

By default, these buildings will not be normalized, but consideration should be given to normalization procedures that could be approved by the County or a building improvement board.

Renewable Energy and Time of Use Considerations

The standard Site EUI calculation does not make any special considerations for onsite renewable energy. Each building's total energy use is divided by the building gross square footage regardless of the source of that energy. Roughly 3% of County properties that reported 2019 energy benchmarking data

[7] Property types eligible to receive a 1-100 ENERGY STAR score: https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/identify-your-property-type-0

generated and used renewable energy onsite.[8] While a small portion of properties report onsite generation today, those with renewable energy systems get a sizable amount of energy from those systems. Of those 3% of buildings, on average, onsite renewable systems produced 27% of electricity use at those properties. Over time, it is likely that more buildings will add onsite renewable energy capacity.

Some stakeholders expressed that solar and renewable development projects are an important consideration to BEPS. They cite solar's contribution to reducing GHGs and the significant capital investment of on-site renewables. Others noted the complexity of accounting for solar renewable energy credits (SRECs) and whether they are retained or sold.

While the stakeholder group did not come to a consensus on how to treat on-site solar, there are three potential ways of doing so:

1. Onsite solar could have no influence on site EUI, which would mirror how ENERGY STAR Portfolio Manager calculates site EUI. Washington, DC is likely to adopt this option in its public comment draft.
2. Onsite solar could be given partial credit. For instance, in calculating source EUI and ENERGY STAR scores, ENERGY STAR gives 64% credit to onsite renewable energy.
3. Onsite solar could be given full credit, meaning that the (normalized) site EUI calculated by ENERGY STAR would be adjusted by subtracting onsite renewable energy use from total building energy use.

The stakeholders also discussed but made no recommendation regarding the possibility of the County's BEPS encouraging building owners to shift their electricity usage from periods of peak electricity demand on the utility to off-peak periods as a way of improving grid reliability, lowering the cost of improvements to the grid and thereby lowering costs for electricity users, facilitating the addition of intermittent wind and solar to decarbonize the grid, and allowing the grid to better accommodate electrification of buildings and vehicles. To fully benefit from such load shifting, a building needs multiple systems that are not yet commonplace including a meter that records electricity usage at least hourly and a building automation system that can adjust building electricity usage in response to signals from the utility. Accordingly, the County's BEPS law could initially rely on annual energy usage but empower the County to consider switching buildings to a BEPS metric based on time of use as conditions become more favorable to do so.

Buildings Covered by BEPS

BEPS would apply to buildings covered under the County's Benchmarking Law. Over 100 million square feet, roughly 35% of the County's total building area[9], is currently covered by County's building benchmarking and transparency law, which requires certain County-owned and private non-residential buildings that are 50,000 square feet and greater to annually track and report building and energy performance details to the County.

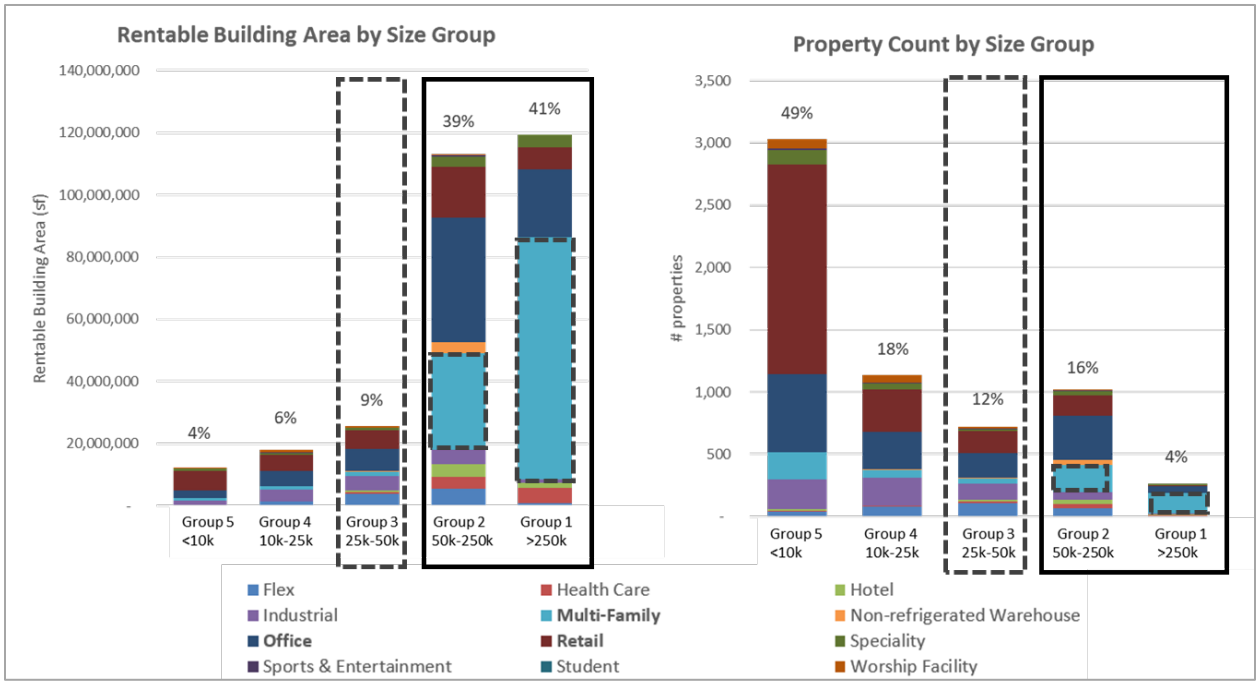
[8] Renewable energy generation data is not a required field in Portfolio Manager; thus, this figure may not fully represent the number of benchmarked buildings in the County that have installed renewables onsite.
[9] Source: CoStar Commercial Real Estate Information Company. Data accessed Jan 2020.

As of June 2020, all benchmarking groups[10] have now reported at least three years of publicly disclosed data. This data set provides a wealth of information for assessing current performance by sector, grouping properties by size, and setting standards.

The vast majority of building area in Montgomery County is comprised of buildings 25,000 square feet or greater. Future expansion of the benchmarking law to add multifamily buildings and properties 25,000 gross square feet and greater would capture roughly 85% of county building area.[11]

As other property types (like multifamily) and sizes (like those between 25,000 to 50,000 gross square feet) are phased into the benchmarking program, they would also become covered by BEPS. In Washington DC, the BEPS applies to only buildings 50,000 gross square feet and larger in the first compliance cycle, then to buildings 25,000 gross square feet and larger starting in the second compliance cycle, and finally to buildings 10,000 gross square feet and larger starting in the third compliance cycle.

Chart 2: Energy Benchmarking Law Coverage



Rentable building area and number of sites currently covered by benchmarking ordinance in black square; anticipated benchmarking expansion to multifamily properties and those 25k sq ft and greater in dotted squares. Source = CoStar, accessed Jan 2020.

[10] County buildings first reported CY 2014 data June 1st, 2015 with 2015 as the first year publicly disclosed. Group 1 (sites 250k sq ft and greater) first reported CY 2015 data June 1st, 2016 with 2016 as the first year publicly disclosed. Group 2 (sites 50k sq ft to 250k sq ft) first reported CY 2016 data June 1st, 2017 with 2017 as the first year publicly disclosed.

[11] Industrial properties are not currently covered by the benchmarking law and would not likely be included in future coverage.

Standard Setting

Detailed analysis is required to set long-term and interim energy performance standards for buildings. Several resources are available on technical considerations for standard setting including Carbon Neutral Cities Alliance recommendations on site EUI metrics.[12] The legislation establishing BEPS could specify that performance targets are set by regulation; give authority to a County department (e.g. DEP and/or the Department of Permitting Services) to establish performance targets; or charge an appointed committee of government and private sector representatives with this responsibility (see the section entitled *Building Energy Improvement Board*).

While the terminal standard itself needs further research to be set, the standard setting methodology would be to draw a straight line from each building's initial performance in a base year to its required terminal performance (e.g., 2035) and set interim standards for all buildings at intervals of 5 years.

Based on the current performance of each building, each building will have its own specific interim targets. The baseline year should be set in such a way as to not penalize building owners as a consequence of reduced or increased energy use due to COVID-19 or other extraordinary events, and/or should take into account changes in operations such as by averaging performance over two or more benchmarking years. However, the way that interim targets are set and calculated should be uniform and capable of being automatically generated by software to reduce the level of effort required to calculate individual targets.

Given the differences in energy use between buildings, standards will need to be developed based on property type. Buildings' property types will be determined by their Portfolio Manager designation.

Office, multifamily, and retail make up 81% of county building area and 69% of properties over 25,000 square feet. These groups have a larger sample size of buildings benchmarking and significant pool of data to pull from (or will once they are covered by the energy benchmarking law, as in the case of multifamily). These property types are also eligible for ENERGY STAR scores, meaning that site EUI can be normalized in ENERGY STAR Portfolio Manager. For properties with secondary spaces, an area-weighted standard should be assigned according to the different occupancy types in the building.

For property types with a small sample size, such as hospitals, courthouses, hotels, malls, etc., a national data set with climate adjustments should be used as a standard-setting reference to represent the type's typical energy use. The final performance standard will be informed by many data sets including local and national buildings of the property type and building science calculations. Using national datasets removes dependencies on other jurisdictions for publishing schedules or data quality. If additional sources for robust, regional data that align with the county's building stock become available in the future they should be considered as a reference resource.

Several national building inventories are also available for reference in standard setting. For instance, the Commercial Building Energy Consumption Survey (CBECS) is updated every few years; 2012 is the

[12] Carbon Neutral Cities Alliance "Performance Standards for Existing Buildings Performance Targets and Metrics Final Report," March 2020.

latest and 2018 will be the next data set. Fannie Mae and ASHRAE are two other sources of reference data. In setting standards, the County will give careful consideration to ensure consistent and equitable treatment across all property types including those that cannot receive an ENERGY STAR score.

Less common building types, such as laboratories and strip malls, could use a custom approach with review and approval. Stakeholders and owners of these less common property types could also propose normalization procedures that could be approved as part of the energy performance target setting process.

Reporting Timelines

To limit the administrative burden on both building owners and County staff, the stakeholders agreed that reporting for annual Benchmarking Law compliance and BEPS should be accomplished using EPA's ENERGY STAR Portfolio Manager. BEPS will rely on the same benchmarking submission, which reduces administrative paperwork requirements on owners.

The recommended site EUI metric with normalization is available through Portfolio Manager for most property types. The County plans on measuring building performance standard compliance based on benchmarking reports from appropriate year(s).

Compliance Pathways

Buildings that meet the applicable performance standard will have complied with the law. For those that do not hit the standard, or have demonstrable difficulty complying, existing laws in other jurisdictions offer a prescriptive pathway of compliance. This prescriptive path is a set list or menu of upgrades that must be undertaken, such as retro-commissioning and mechanical, lighting or other systems replacements, in lieu of meeting the performance standard.

By adopting a flexible, long-term path as a BEPS policy model, the County hopes that a prescriptive path isn't necessary as the policy already provides maximum flexibility for building owners and allows them to find optimum solutions for their buildings without the County prescribing measures.

However, if interim standards are not being met, additional prescriptive requirements could be required. For instance, under-performing buildings may be subject to additional prescriptive requirements such as audits and capital planning to bring the building to its end compliance level on schedule. Or, for buildings that miss or anticipate missing interim standards, the County may require alternative compliance plans be developed for review by the appropriate entity authorized to approve energy performance targets. Additionally, buildings with planned capital improvement projects or those scheduled for demolition may submit plans for approval showing work is scheduled to be completed or demolition performed.

In New York City, the prescriptive pathway only applies to buildings not covered by the performance standard (e.g., affordable housing, rent-regulated multifamily, places of worship). DC's law directs the Department of Energy and Environment (DOEE) to create a prescriptive compliance pathway for buildings that results in savings comparable to the savings from the performance path. Considerable work and research will be required to develop the prescriptive path, the details of which will be

published as guidance in 2021. The prescriptive path will add significantly to the complexity of DC's BEPS compliance and enforcement processes.

To incentivize early compliance with the performance standard and spur savings above and beyond the required target, the County could also explore an energy efficiency credit trading system, either between buildings or within portfolios. Such a system would allow high-performing buildings to sell or trade credits to under-performance buildings such that all covered buildings in the County, or within one portfolio, collectively meet the performance standard.

Building Energy Improvement Board

As BEPS is implemented, unique situations may arise, buildings may fall behind on compliance, and decisions may need to be made about normalization and other policy elements. As such, creating a board that can help to interpret and apply the policy may be useful.

Other jurisdictions have enacted advisory boards to help expand capacity beyond existing staff. Part of the St. Louis BEPS is enacting a "building energy improvement board" which is appointed by the mayor and expands city bandwidth in terms of reviewing, approving, and providing feedback on plans. The board will have representation from the building industry, labor, utilities, commercial building owners, and affordable housing owners and tenants. The board's role is three-fold: to oversee a rulemaking process that sets and updates performance standards; to advise on and oversee implementation of the ordinance; and to administer a process for creating alternative compliance methods for buildings unable to meet the required standards.[13] Compared to other jurisdictions, St. Louis's board has more authority and a technical subcommittee. And, unlike other jurisdictions, St. Louis will pay stipends to its board members.

The Clean Energy DC Act, which created DC's BEPS, also created a BEPS Task Force to advise the District on how to implement the BEPS program, including commissioning research, rulemaking, setting standards, and granting extensions as well as to advise on developing complementary policies and programs. The Act specified agency representation and tasked the Mayor with appointing unpaid members representing private stakeholders including owners and operators of affordable housing, multifamily building, commercial building, and universities, as well as energy service providers, professional associations, and advocates for building decarbonization. DC's DOEE convened, chairs, and staffs the Task Force.

In New York City, Local Law 97 created an unpaid Advisory Board to provide guidance and prepare and submit periodic reports on the results of implementation once the law is fully in effect. The Advisory Board is chaired by the Department of Building's Chief Sustainability Officer, and comprised of 16 appointees, with eight appointments made by the mayor, and eight appointments made by the city council speaker. The Board members are architects, engineers, property owners, representatives from the business sector and public utilities, environmental justice advocates, and tenant advocates.

[13] Source: https://www.stlouis-mo.gov/government/city-laws/board-bills/boardbill.cfm?bbDetail=true&BBId=13504

Adjustment Processes

Throughout a building's lifecycle, special situations may arise such as financial distress, changing ownership, changing occupancy type, vacancy, demolition, or other events that may necessitate adjustments of compliance, timing, or penalties.

As mentioned previously, a "Building Energy Improvement Board" could be established to review and provide recommendations on adjustments, to be approved by the County. For example, an adjustment could be made to the long-term standard if the building is redeveloped to a new building type, e.g. redevelopment of an office building into a multifamily building. Likewise, extra time could be granted per compliance cycle in the case of financial distress or ownership change immediately preceding a 5-year target.

Equity Considerations

Policy considerations need to be evaluated for challenged and under-resourced sectors that may include affordable housing, small businesses, and non-profits. This is an area that needs further study and recommendation from the appropriate County departments or a Building Energy Improvement Board.

In NYC, Washington DC, and St. Louis, building performance policies allow challenged sectors compliance extensions, funding carve outs for specific sectors like affordable housing, longer compliance cycles, or options to meet prescriptive requirements.

Given the direct benefits of energy efficient buildings such as lower operating costs and utility bills and corresponding co-benefits like improved comfort, health, and resiliency, stakeholders felt that these sectors should not be exempted, but rather given support or other allowances to comply. Making the standards less stringent, or exempting these sectors all together, would likely limit realized energy efficiency in those building types which can have negative consequences for equity. Therefore, challenged sectors should still be subject to BEPS.

Similar to other jurisdictions, the County could offer these sectors modifications to the requirements (e.g., extensions, delays, longer compliance cycles), specialized technical assistance (e.g., staff specific for affordable housing or other building types), and/or limited financial assistance.

Penalties or Alternative Compliance Payments

Currently, Maryland state law caps civil penalties of local laws at $1,000 per offense (Md. Code Ann., Local Gov't. § 10-202(b)). While the County can issue multiple citations, this process creates excess administrative burden on County staff—and the final penalty amount will very likely be less than the cost of the energy efficiency improvements needed to comply with BEPS. If the County proceeds with BEPS, an amendment to this state law, or identification of another mechanism for inducing compliance, may be necessary to ensure the effectiveness of this policy. Since the BEPS standards have not yet been determined, additional analysis would be required to determine the penalty amounts that would be commensurate with the cost to comply.

Related to the penalty itself, the stakeholders were supportive of directing compliance funds back to building owners who need assistance with complying with BEPS, either focusing on a certain sector such as affordable housing or the worst-performing buildings to help them meet the standard. Stakeholders also suggested a tiered fine structure that would not penalize building owners who were close to their target as severely as building owners who were far away from meeting their target to recognize building owners for making progress. Another suggestion was to work with the Montgomery County Green Bank to create a revolving loan fund for building owners to access capital for upgrades that would grow over time.

IMT also suggested that rather than using the term "penalty", the County could explore using "alternative compliance payment" or a property tax assessment to enable pass-through benefits to tenants as a means to engage building tenants on the BEPS requirements.

Technical and Financial Assistance for Building Owners

Existing Resources

While Montgomery County explores a BEPS requirement, it is worth considering the existing resources building owners already have access to that will help them achieve the new requirements:

- **Utility Incentives**
  Building owners and tenants who directly pay an energy invoice can take advantage of the EmPOWER Maryland utility incentives, which are ratepayer-funded, utility-provided energy efficiency programs. Pepco, BGE, Potomac Edison, and Washington Gas offer incentives and rebates for commercial, industrial, and multifamily properties in Montgomery County and throughout Maryland. Current program offerings include prescriptive Incentives for HVAC, lighting, commercial kitchens, variable frequency drives (VFDs), controls, and select energy-efficient equipment; building tune-ups and monitoring-based commissioning; combined heat and power (CHP) systems; instant rebates on lighting and HVAC equipment; building operator training programs; and custom programs for energy efficiency projects that aren't included in a different program.

- **Federal Programs**
  Federal Tax Rebates are available for energy efficiency upgrades (179D) and renewable energy systems (ITC).

- **State Programs**
  The Maryland Energy Administration offers state-level grants, tax credits, and loan programs for energy efficiency and renewable energy projects in commercial and multifamily buildings on a rolling fiscal year basis.

- **County Programs**
  Technical and financial assistance is available from the County. Support includes:
    - **Technical Assistance** from the Department of Environmental Protection for Benchmarking Law reporting and compliance.

- **Montgomery County Commercial Property Assessed Clean Energy (PACE) Financing Program** which provides up to 20-year financing for energy and renewable projects secured to the property and repaid as an assessment on the property tax bill. PACE financing is available for existing buildings and new construction projects that are incorporating energy efficiency improvements in renovation and construction. Learn more at MC-PACE.com.
- **Montgomery County Green Building Property Tax Credit** wherein County property taxes reduced for new and existing buildings that achieve certain LEED certifications (Sec. 52-18Q). Legislation is pending (Bill 10-20) to shift these property tax credit incentives to energy efficiency and actual, measured energy reduction metrics and expand building certifications recognized.

- **Montgomery County Green Bank**
  The Montgomery County Green Bank is a County-created non-profit that partners with lenders to provide better loan rates, terms, and credit access for clean energy and energy efficiency projects. Its mission is to catalyze private investment, not replace private capital sources, via de-risking such as providing technical assistance, credit enhancements, upfront capital, preferred rates, etc. The Green Bank offers products for commercial buildings, multifamily and affordable housing and is looking to develop additional programs to meet building owners' needs. Learn more at https://mcgreenbank.org.

Potential Opportunities for New Resources

In jurisdictions that have implemented BEPS or "beyond benchmarking" requirements, the new policies tend to come with additional resources, programs, and/or funding to assist building owners in meeting the increased requirements. These programs include technical and financial support.

Stakeholders suggested targeting outreach by sector to provide tailored technical assistance for key sectors. Benchmarking data can help to assess those sectors most in need of assistance. As building efficiency is tracked over time, if performance does not improve, outreach methods will need to be reevaluated.

Montgomery County should consider a range of technical assistance, including:

- **Hub/Accelerator Programs**

Models started in NYC and DC with the goal of providing technical and personalized advisory services to streamline the process of making energy efficiency improvements, capacity building, training, and collaboration. There may be the potential to collaborate with DC on a regional high-performance building hub.

Stakeholders favored a regional hub as it could be confusing to coordinate across multiple hubs for owners who may have a portfolio across multiple jurisdictions. In addition, companies that provide building energy assessment and improvement services work throughout the region. A one-stop-shop

would be more efficient to provide technical assistance that is aligned with the new standards and is directed at reaching as many people as possible.

- **Additional Incentives**

The County may need to work with those providing existing resources and incentives (e.g. utilities, Green Bank, etc.) to suggest or develop additional incentives for owners. For instance, the County could recommend increased and varied utility incentives as they seem most effective and popular but are often limited for some properties like individually metered multifamily buildings.

- **Outreach and Education**

    - **Helping owners and tenants work together**

    The County could offer landlord-tenant collaboration workshops to bring tenants and building owners together to see how both can cooperate for their mutual benefit to meet the goals of BEPS. Training on green leasing is one example of a program that can align incentives and continue to improve performance in leased spaces.

    - **Making the business case for energy efficiency**

    Six studies have found that rental prices, sales prices, and occupancy rates are all higher in efficient/green commercial buildings.[14] High performance buildings also experience higher net operating income (NOI) due to lower utility costs, higher rents, lower vacancy rates, and lower tenant turnover/associated expenses.[15]

    Many case studies, locally and nationally, are available to support the business case and show soundness of investments and return, which will likely also hold true for Montgomery County owners.[16]

    Cost/benefit analyses by building sector (e.g. multifamily) may be useful to evaluate estimated costs to comply with BEPS versus energy savings and other benefits.

    - **Coordinate with lenders and brokers**

    It would be useful to coordinate training of lenders and appraisers on the benefits of underwriting efficiency improvements. The County and/or the Montgomery County Green Bank could communicate efficiency benefits to the lending community to educate them on how to

[14]Even controlling for other factors (like location and size), six statistical analyses looking at different data sets and time periods all show that green, efficient commercial buildings are more valuable assets than their peers. https://www.imt.org/resources/added-value-of-energy-star-labeled-commercial-buildings-in-the-u-s-market/

[15] "Utilizing Commercial Real Estate Owner and Investor Data to Analyze the Financial Performance of Energy Efficient, High Performance Office Buildings," 2017, prepared for U.S. Department of Energy, Building Technologies Office. https://energy.gov/sites/prod/files/2017/05/f34/bto_PilotResearchStudy-DOEFinancialDataInitiative_5-8-17.pdf

[16] Case studies of renovations to improve the energy efficiency of commercial and multifamily buildings show that they often yield $2-3 in added property value for every dollar invested. https://www.imt.org/resources/valuing-energy-efficiency-in-multifamily-housing/

underwrite efficiency improvements. Traditional mortgages are often the cheapest sources of capital.

Many financing approaches rely on the value of the building, which makes it important for owners seeking access to borrowing that appraisals recognize the value of high performing buildings. By presenting the right information in the right format to appraisers, owners can improve the odds that this will happen.

Next Steps

The stakeholder work group appreciated the opportunity to provide Montgomery County input on the design and implementation of a BEPS policy for existing buildings. While this report is a compilation of varied interests, the stakeholders were able to find common ground on the need to improve the energy efficiency of buildings in the County, provide market certainty for building owners, and advance the County's climate goals.

As this report illustrates, the establishment of Building Energy Performance Standards is a complex process that, while a key measure to help the County reach its climate goals, would place significant requirements on building owners in the county. This report provides recommendations on key aspects of a BEPS policy and highlights several important issues that need further analysis. In order to implement BEPS, these issues will have to be addressed during the process of adopting legislation authorizing BEPS and/or during the implementation process. Stakeholders expressed a willingness to continue to engage on this important topic.

Appendix A: List of Organizations Involved in the Stakeholder Work Sessions

Representatives from the following entities participated in the stakeholder work sessions and gave DEP permission to list their organizations in the report. As noted in the report, inclusion in this list does not indicate agreement with any specific recommendation in the report.

Property Owners, Developers, and Managers	
○ Brookfield Properties ○ The Duffie Companies ○ Federal Realty Investment Trust	○ Southern Management Corporation ○ The Tower Companies ○ Unibail-Rodamco-Westfield
Contractors and Consultants	
○ Gensler ○ MaGrann Associates ○ New Ecology, Inc.	○ SSGOVRELATIONS ○ Sustainable Design Consulting, LLC
Non-profit and Industry Associations	
○ American Council for an Energy-Efficient Economy (ACEEE) ○ American Institute of Architects (AIA) Potomac Valley ○ Apartment and Office Building Association (AOBA)	○ Commercial Real Estate Development Association (NAIOP DC/MD) ○ Institute for Market Transformation ○ Montgomery County Green Bank ○ National Housing Trust
Government	
○ City of Gaithersburg ○ City of Rockville ○ City of Takoma Park ○ Montgomery College	○ Montgomery County Department of Environmental Protection ○ Montgomery County Department of General Services ○ Montgomery County Department of Permitting Services

Appendix B: Materials from Stakeholder Work Sessions

Below are the presentations and summary meeting notes from the stakeholder work sessions:

Meeting Date	Link to Presentation	Link to Meeting Notes
January 29, 2020	Presentation	Meeting Notes
February 26, 2020	Presentation	Meeting Notes
March 18, 2020	Presentation	Meeting Notes
April 21, 2020	Presentation	Meeting Notes
May 19, 2020	Presentation	Meeting Notes