

This policy is to establish a process meeting the benchmarking requirements and supporting the goal and reporting requirements of Action H-1.3.3 in the City of Columbia's Climate Action and Adaptation Plan (PR 89-19 A)- *Introduce a policy that requires all municipal buildings to be benchmarked with the current Energy Score rating, the energy use intensity (kBTU/sqft) and the energy reduction goal. These benchmarks and goals shall also be posted on the City's website.*

The Building Energy Benchmarking and Transparency Policy has been created to outline the necessary steps for annual review and reporting of energy and water use at City of Columbia buildings by City staff and City Council.

- 1) **Definitions.** The following terms used in this Policy, shall have the meanings set forth below:
 - a) **Benchmarking** means to track and input a building's or a campus of buildings' 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.
 - b) **Benchmarking Tool** means the website-based software, commonly known as "ENERGY STAR Portfolio Manager®", developed and maintained by the United States Department of Energy and Environmental Protection Agency to track and assess the relative energy use of buildings nationwide. This term also applies to any successor system thereto, including any change or addition made to such a tool by the United States Department of Energy and Environmental Protection Agency.
 - c) **Certificate of Occupancy** means the certificate issued by the City of Columbia division of Building and Site Development allowing building occupancy or use.
 - i) **Occupancy** means the percentage of a property's Gross Floor Area that is occupied and operational. This will be assessed according to the guidance provided for ENERGY STAR Portfolio Manager®.
 - d) **City Manager** means the City Manager of the City of Columbia.
 - e) **Energy** means electricity, natural gas, fuel oil, steam, biomass or other product for use in a building, or renewable on-site electricity generation, for purposes of powering or fueling end uses in a building.
 - f) **Energy Use Intensity (EUI)** The EUI expresses a building's energy use as a function of its size or other characteristics for building types in Portfolio Manager. EUI is expressed as energy per square foot per year.

Calculated by dividing the total energy consumed by the building in one year (measured in kBtu) by the total gross floor area of the building.

- g) **Energy Score** means the "1" to "100" numerical score produced by the Benchmarking Tool, also known as "ENERGY STAR Portfolio Manager®" score or any successor score thereto. The Energy Score assesses a building's energy performance relative to similar buildings, based on source energy use, operating characteristics, and geographical location.
- h) **Gross Floor Area** means the total number of square feet measured between the exterior surfaces of the enclosing fixed walls of a building. The term Gross Floor Area includes areas for: lofts, mezzanines, vent shafts, elevator shafts, flues, pipe shafts, vertical ducts, stairwells, light wells, basement space, mechanical or electrical rooms, and interior parking.
- i) **Municipal Building** means any structure built for the support, shelter or enclosure of persons, animals, movable property of any kind, and which is permanently affixed to the land. For purposes of this Policy, a building is one that is owned and operated by or on behalf of the City of Columbia or for which the City of Columbia regularly pays all of the annual utility bills or the portion of the annual utility bills related to City of Columbia operations in the case of buildings shared with another entity.
 - i) **Group 1 Municipal Building** containing 10,000 or less Gross Square Feet, as identified by the City Manager or designee.
 - ii) **Group 2 Municipal Building** containing more than 10,000 Gross Square Feet, as identified by the City Manager or designee.
- j) **Sustainability Manager** means the head of the Office of Sustainability or if none has been designated, the Deputy City Manager.

2) **Schedule.**

- a) By **June 1, 2022**, and by **June 1, each year thereafter**, the City of Columbia shall benchmark all Group 1 City owned buildings for the previous calendar year.
- b) By **June 1, 2023**, and by **June 1, each year thereafter**, the City of Columbia shall benchmark all Group 2 City owned buildings for the previous calendar year.

3) **Verification.**

- a) The City Manager or their designee shall verify all benchmarking information for each building.
- b) Benchmarking information shall include at least the following:
 - i) Building address

- ii) Energy use intensity (EUI)
- iii) Water use data
- iv) The Energy Score that compares the energy use of the building to that of similar buildings, where available.

4) Reporting and Disclosure.

- a) The City Manager or their designee shall prepare and submit an annual report to the the City Council reviewing and evaluating energy and water efficiency in City-owned buildings, including the most recent reported Energy Benchmarking Information from ENERGY STAR Portfolio Manager® that compares the energy and water use of the building to that of similar buildings, where available, the actual energy and water use of each covered building, and the greenhouse gas emissions associated with the energy use. Said report shall also list any building that the City Manager exempts from the benchmarking requirement with an explanation, pursuant to subsection (5) below.
- b) The City Manager and the Sustainability Manager shall make reported benchmarking information readily available to the public on the City's website and at each benchmarked property.


5) Exemptions. The City Manager or their designee may exempt from the benchmarking requirement any building for which any of the following apply:

- a) The building had average physical occupancy (as determined using Portfolio Manager) of less than 50 percent throughout the calendar year for which benchmarking is required; or
- b) The building is new construction and the building's Certificate of Occupancy was issued during the calendar year for which benchmarking is required.

6) Responsibility.

- a) The City Manager or their designee shall ensure all required data for all Municipal Buildings covered by this policy are collected and entered into Portfolio Manager on a schedule allowing for compliance with the Verification, Reporting and Disclosure, and Exemptions section of this policy.

Approved By: _____


John Glascock
City Manager

Effective Date: **Oct 20, 2021**

BACKGROUND

Development of the policy

The Good Stewards Buildings team took up developing the benchmarking policy in earnest in late 2020. Over the next months, the team collected examples from other municipalities, consulted with staff involved in the implementation of policies, and received guidance from the Midwest Energy Efficiency Alliance. Staff also received input from the CAAP Core and Executive teams as well as the Climate and Environment Commission.

Impact

Measuring and tracking energy use in City buildings is fundamental to reducing wasted energy, minimizing operational expenses, and lowering emissions. In 2019 energy used in City buildings accounted for ~30% of our municipal emissions and cost \$1.7M.

CAAP action H-1.2.1 reads: *“Provide assistance to commercial buildings above a minimum gross floor area to track energy and water usage. Require all such commercial buildings to disclose their energy and water use.”* By tracking energy usage in our buildings first, we will show our commitment to the goals of the CAAP and our experience with this policy may also provide helpful insight to our community peers.

The services required to implement H-1.3.3 and H-1.2.1, such as building audits; collecting, reporting and analyzing data; and improvements to buildings and systems present opportunities for increased local economic activity.

Implementation

The annual reporting schedule for the policy is June 1. The policy calls for having the details and energy use of all City of Columbia buildings entered into Portfolio Manager by June 1, 2023. This information will be provided in a report and available on the City website.

Beginning in 2009 the Office of Sustainability has been collecting annual energy use information for 36 City buildings the project team estimates there are an additional 39 buildings to be entered into Portfolio Manager. Cost estimate to complete this work is ~\$65,000. The project team has developed an RFP and identified funding to begin this process.

Most of the continuing work involves data collection, analysis and reporting and has been automated. When new facilities are brought online or existing buildings are modified or their use changes significantly, updates will need to be made to the Portfolio Manager platform. If these are done in a timely way, this should not be a major task.

ADDITIONAL INFORMATION

Portfolio Manager

EPA's free online [ENERGY STAR Portfolio Manager® tool](#) is the industry standard for measuring and tracking energy performance within commercial buildings. In fact, the commercial buildings market has used Portfolio Manager to benchmark billions of square feet of commercial floor space across hundreds of thousands of buildings. The tool provides dozens of energy performance metrics, and some buildings can also receive a 1 – 100 ENERGY STAR score, which rates energy performance in comparison to similar buildings across the country.

Designee Responsibilities Details

1) **Verification.**

- a) The City Manager or their designee shall verify all benchmarking information for each building.
- b) Benchmarking information shall include at least the following:
 - i) Building address
 - ii) Energy use intensity (EUI)
 - iii) Water use data
 - iv) The Energy Score that compares the energy use of the building to that of similar buildings, where available.

PM has a data review function that can be managed as an automatic report for the entire portfolio or on a property by property basis. Identification of errors can be straightforward and completed in less than 30 minutes. Resolving errors may take more time and require outside assistance to find data.

2) **Reporting and Disclosure.**

- a) The City Manager or their designee shall prepare and submit an annual report to the the City Council reviewing and evaluating energy and water efficiency in City-owned buildings, including the most recent reported Energy Benchmarking Information from ENERGY STAR Portfolio Manager® that compares the energy and water use of the building to that of similar buildings, where available, the actual energy and water use of each covered building, and the greenhouse gas emissions associated with the energy use. Said report shall also list any building that the City Manager exempts from the benchmarking requirement with an explanation, pursuant to subsection (5) below.

- b) The City Manager and the Sustainability Manager shall make reported benchmarking information readily available to the public on the City's website and at each benchmarked property.

PM has reports that meet these requirements on an individual building and portfolio level. The report will also likely require some time to develop a template for additional information and to improve readability, this could be done during the first report cycle or added at a later date(s).

Power BI has dashboard and mapping capabilities that can easily be embedded into City websites. Some of the dashboard elements are already developed.

- 3) **Exemptions.** The City Manager or their designee may exempt from the benchmarking requirement any building for which any of the following apply:
 - a) The building had average physical occupancy (as determined using Portfolio Manager) of less than 50 percent throughout the calendar year for which benchmarking is required; or
 - b) The building is new construction and the building's Certificate of Occupancy was issued during the calendar year for which benchmarking is required.

Fulfilling this responsibility will vary depending on the number and type of exemptions. Exemptions for occupancy are rare according to EPA Portfolio Manager support staff. In the case of an exemption most of the time would likely be spent verifying a change to occupancy and quantifying its magnitude.

4) **Responsibility.**

- a) The City Manager or their designee shall ensure all required data for all Municipal Buildings covered by this policy are collected and entered into Portfolio Manager on a schedule allowing for compliance with the Verification, Reporting and Disclosure, and Exemptions section of this policy.

There are three primary categories of data associated with buildings in Portfolio Manager: Building Details, Use Details, and utility usage information.

Building and Use Details are collected at the beginning of the process and include building address, area, use, hours of operation, etc. Whenever these details change, they should be updated in Portfolio Manager as they can affect how a building's usage is compared to peer buildings and how a building is scored.

Currently there are 36 buildings in Portfolio Manager, the Good Stewards CAAP Team estimates there are 39 additional buildings (27 Group I, 12 Group II) that would be covered under this policy and will need to be added to Portfolio Manager.

In order to meet the current schedule of the policy, the remaining Group I buildings would need to be characterized by June 1, 2022, Group II buildings by June 1 2023. When the majority of the current buildings in PM were characterized, energy management consulting services were procured from HDR. They provided Level I and Level II ASHRAE Energy Audits at a cost of \$0.149 and \$0.169 /ft2 respectively. Current pricing information indicates costs for Level I “light” audits \$0.16 /ft2. Below is a breakdown of costs, using these estimates. Level II audits would be most appropriate for buildings with near-term replacement of HVAC or other high energy use equipment. Otherwise Level I audits would meet the requirements for Portfolio Manager.

	Total	Group I GSF<10k	Group II GSF>10k
Count	39	27	12
Area	401,657	128,739	272,919
Cost estimates Level I Light	\$64,265	\$20,598	\$43,667

Utility usage information is required to be updated on an annual basis at the minimum. Currently IT has developed data management processes that automate the usage data upload process. To request, process and upload energy use data for 36 properties takes ~1 hour. There will inevitably be some data issues identified that need to be investigated and corrected, as above, this can extend the time required to complete the task. Generally, data issues can be resolved in a matter of minutes, once they are identified.

Standard Operating Procedures for utility data management have been written by the Office of Sustainability and Information Technology and will be updated as necessary.