

# Building Performance Advisory Group

## Meeting 2: Policy Design Part I

October 8, 2019



THE CITY OF  
**COLUMBUS**  
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF BUILDING  
AND ZONING SERVICES



# Agenda

1. Welcome and introductions
2. Recap of meeting 1 & current progress
3. Benchmarking policy elements
4. Peer city benchmarking policies
5. Compliance made easy
6. Peer sharing
7. Discussion on policy direction
8. Looking ahead

## Recap from meeting 1: *Setting the Context*

- History of sustainability & energy efficiency in Columbus
- Importance of energy efficiency in buildings
- Establishing the need for policy
- U.S policy landscape overview
- Open discussion: concerns about transparency

# Benchmarking Policy Elements



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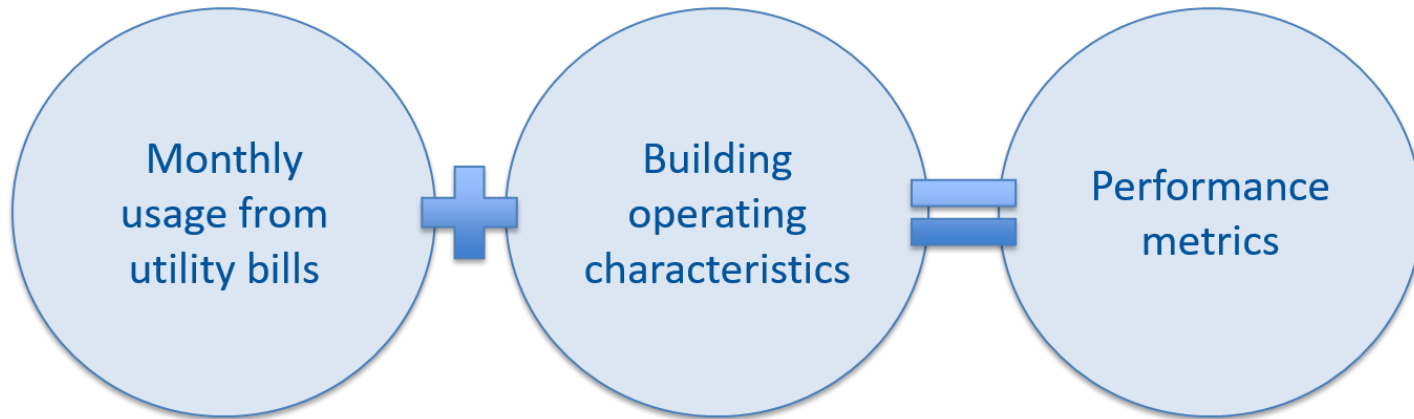
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AND ZONING SERVICES



# Elements of a benchmarking policy



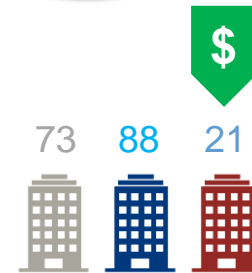
# Benchmarking process



Compare your building to a **national sample** of similar buildings



Compare your buildings of a similar type to **each other**



**Identify underperformers** in your portfolio & set priorities for staff time & investment capital

# Reporting process

- Submitting building benchmarking data to the City via ENERGY STAR Portfolio Manager data request

- Icon/URL on City's website:

## Report Your Data

Have you completed all of the necessary steps to benchmark your building and are ready to submit your data to comply with the ordinance?

[Send benchmarking submission](#)

The screenshot shows the ENERGY STAR Portfolio Manager interface. At the top, there's a navigation bar with 'MyPortfolio', 'Sharing', 'Reporting', and 'Recognition' tabs. A green notification box at the top states: 'Complete this form to respond to the "Philadelphia Custom Reporting Template 2018" for City of Philadelphia Office of Sustainability. This response has also been added to your "Templates & Reports" list on the Reporting tab.' Below this, the main heading is 'Respond to Data Request: Philadelphia Custom Reporting Template 2018 from City of Philadelphia Office of Sustainability (City of Philadelphia)'. The page is divided into two main sections: 'About this Data Request' and 'Your Response'. The 'About this Data Request' section includes the following text: 'Data Requested By: City of Philadelphia Office of Sustainability', 'Instructions: **Reporting Your 2018 Data to the City of Philadelphia**', 'This data request is required under the Philadelphia's Energy and Benchmarking Disclosure Law (Philadelphia Code section 9-3402) for large commercial and multifamily buildings 50,000 square feet and larger to report their energy and water usage annually to the City of Philadelphia.', 'Prior to submitting this report, ALL energy and water meters for your property must be updated from January 1 to December 31, 2018.', 'The DEADLINE to submit 2018 energy and water data is June 30, 2019.', and 'For assistance, visit Sustainability at be'. The 'Your Response' section has a 'Select Information to Include:' section with two dropdown menus: 'Timeframe:' set to 'Single Year', 'Dec 31', and '2018'; and 'Properties:' set to 'One Property' and 'City Hall'. There are two information icons (i) with text: 'If the data requestor has specified a timeframe for the request, you will not be able to change it.' and 'The data requestor may have asked for one or more standard IDs to be included with the property information. Make sure you have entered the requested standard IDs for each property before sending your response.' At the bottom right, there is a 'Generate Response Preview' button and a 'Cancel' link.

# Data transparency

## Visualizations

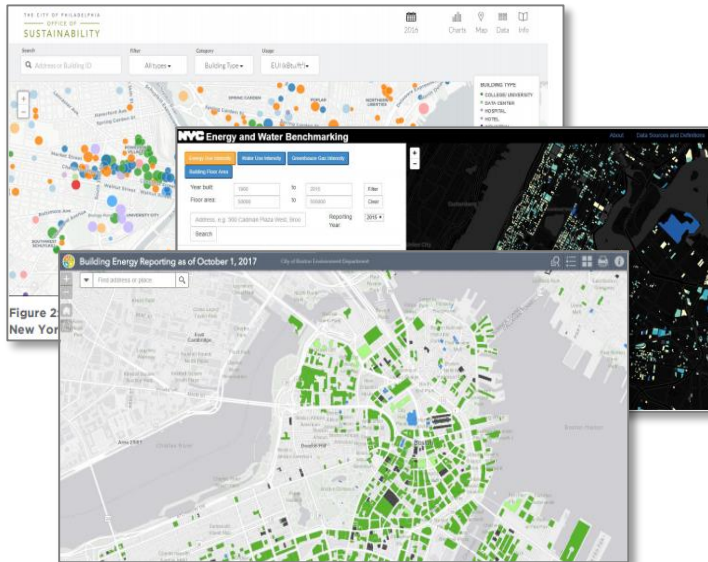


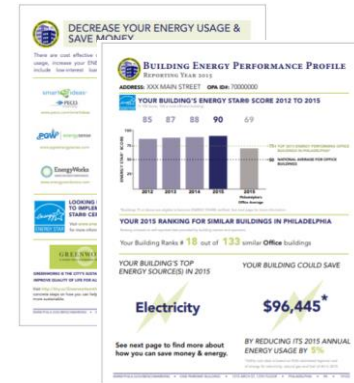
Figure 2  
New York

Visualizations for the Cities of Philadelphia, New York, and Boston (top to bottom)

## Scorecards



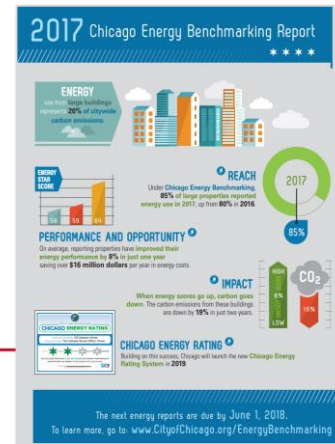
City of Seattle



City of Philadelphia

## Infographics

City of Chicago





# Peer City Benchmarking Policies



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# Benchmarking policies in Columbus' peer cities

City	Building Types & Sizes	Total # of Buildings	Total Square Footage	Additional Requirements
Chicago	Commercial > 50k Multifamily > 50k	3,500	900 million	Data verification by licensed professional 1st year & every 3 years
Denver	Commercial > 25k Multifamily > 25k	3,000	360 million	N/A
Minneapolis	Commercial > 50k Multifamily > 50k	625	110 million	Energy evaluation for all covered buildings once every five years
Orlando	Commercial > 50k Multifamily > 50k	826	126 million	Energy audit or RCx every 5 years if ENERGY STAR score < 50; benchmarking by qualified benchmarker
Reno	Commercial > 30k Multifamily > 30k	500	25 million	Energy audit, RCx, or LEED certification if ENERGY STAR score < 50 or EUI < regional median
San Jose	Commercial > 20k Multifamily > 20k	2,500	250 million	Energy audit, RCx, or improvement measure if below performance threshold (ES score or low EUI)

# Chicago energy benchmarking policy approach

## Benchmarking:

- Commercial & multifamily buildings > 50,000 square feet

## Data verification:

- First year & every third year, data verification required by professional engineer, licensed architect, or other professional designated by Commissioner

## Reporting & transparency:

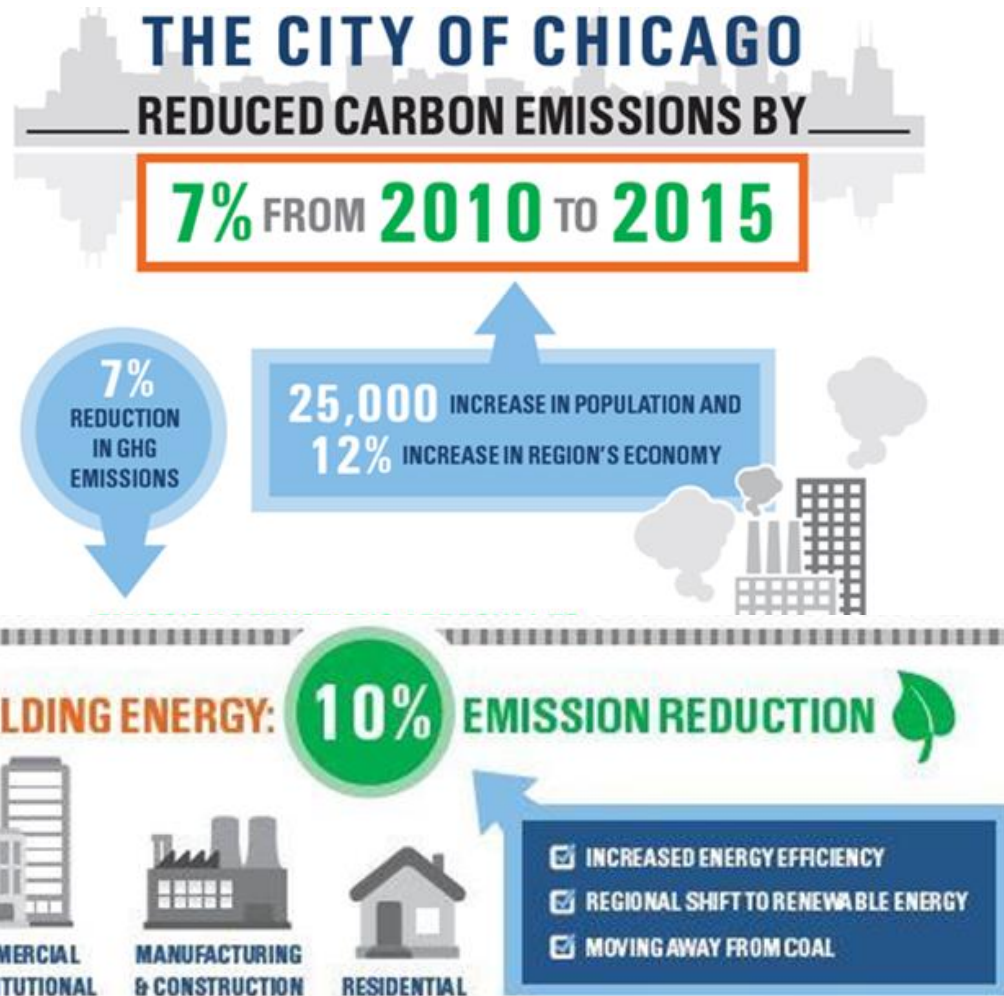
- Annual reporting to the City
- Building-level data publicly shared starting 2nd year

## Energy rating system:

- Building-level placards reporting energy use to be publicly posted



# Demonstrated success - Chicago



# Denver energy benchmarking policy approach

## Benchmarking:

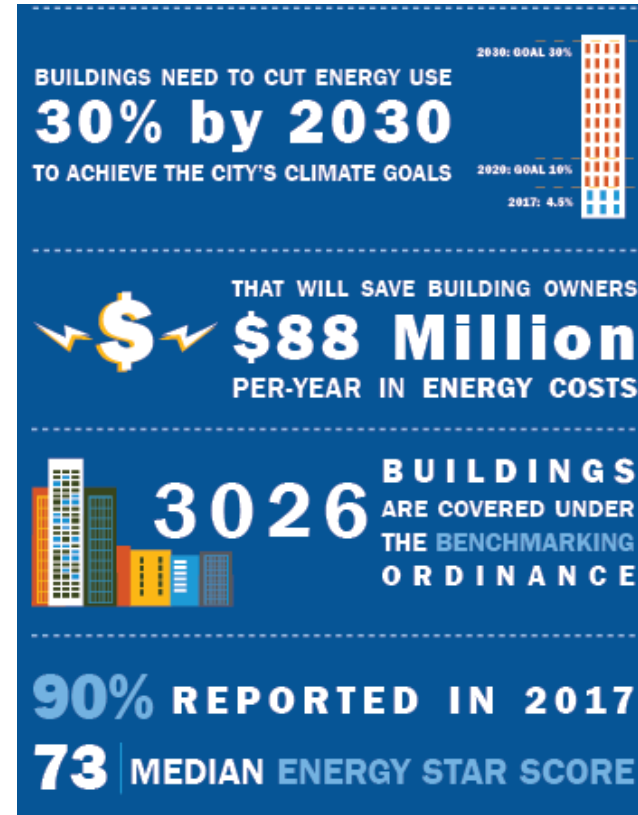
- Commercial & multifamily buildings > 25,000 square feet

## Reporting & transparency:

- Annual reporting to the City
- Building-level data publicly disclosed annually



# Demonstrated success - Denver



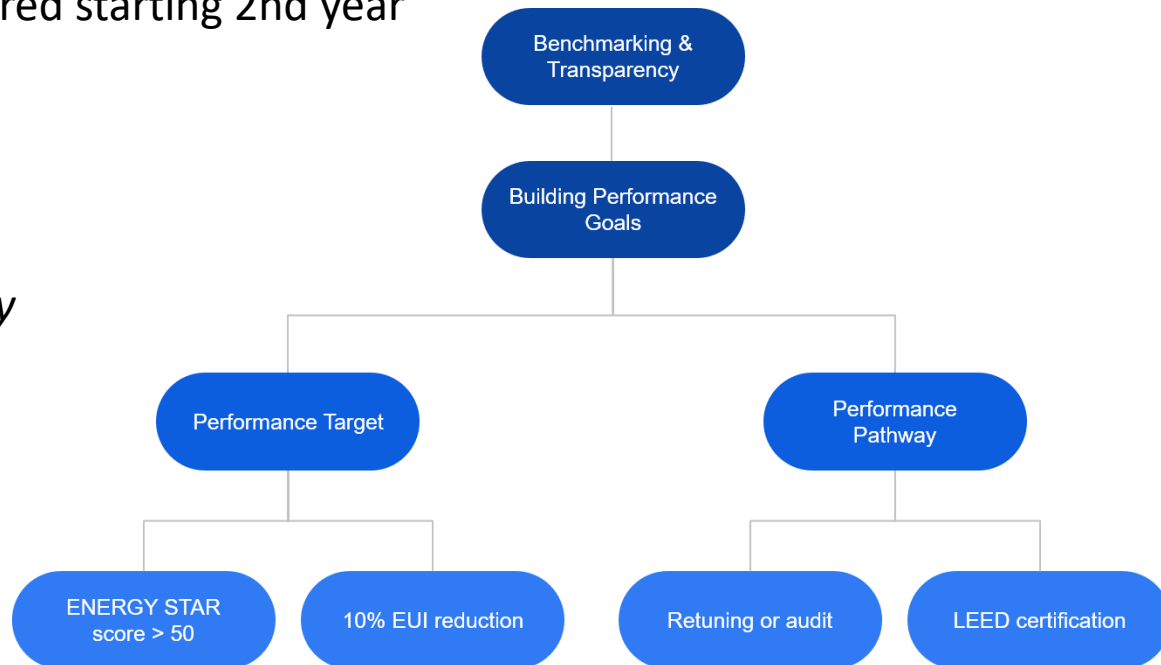
# Reno energy & water efficiency policy approach

## Benchmarking, reporting, & transparency:

- Commercial & multifamily > 30,000 sf
- Annual reporting to the City
- Building-level data publicly shared starting 2nd year

## Additional requirements:

- Buildings must meet performance goals via performance *target* or *pathway* once every seven years
- First reporting date for performance goals due eight years after first benchmarking reporting year



# Compliance Made Easy



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# Benchmarking compliance process



# Step 1: collect data

**1 Collect Data**

- 1. Property information**
  - Primary use
  - Name & building address
  - Gross floor area
  - Year built
- 2. Property use details**
  - Operating hours
  - # of workers
  - # of computers
  - Other details based on building type
- 3. Utility bills**
  - One current utility bill for each energy & water meter serving the building

**Data Required for All Properties**

Property Name \_\_\_\_\_

Property Address \_\_\_\_\_

Total Gross Floor Area of Property \_\_\_\_\_ Sq. Ft./Sq. M.

Irrigated Area \_\_\_\_\_ Sq. Ft./Sq. M./ Acres

Year Built/Planned for Construction Completion \_\_\_\_\_

Occupancy \_\_\_\_\_ %

Number of Buildings \_\_\_\_\_

**Office Uses**

**Data Collected for Office Uses**

The following information is required to get an ENERGY STAR Score (if eligible):

Gross Floor Area \_\_\_\_\_

Weekly Operating Hours \_\_\_\_\_

Number of Workers on Main Shift \_\_\_\_\_

Number of Computers \_\_\_\_\_

Percent That Can Be Cooled \_\_\_\_\_

The following information is optional and not used to calculate a score; it may inform future analysis and score revisions by EPA and/or may help you manage and compare your properties:

Percent That Can Be Heated \_\_\_\_\_

# Step 2: input data

## 2 Input Data

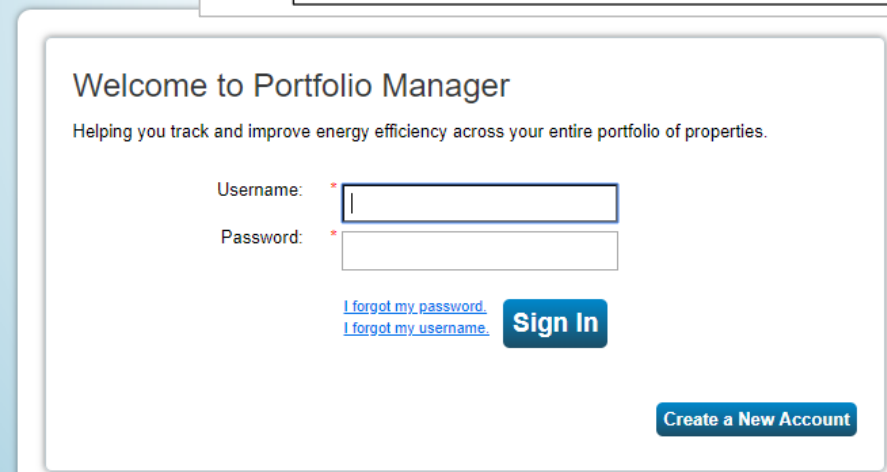
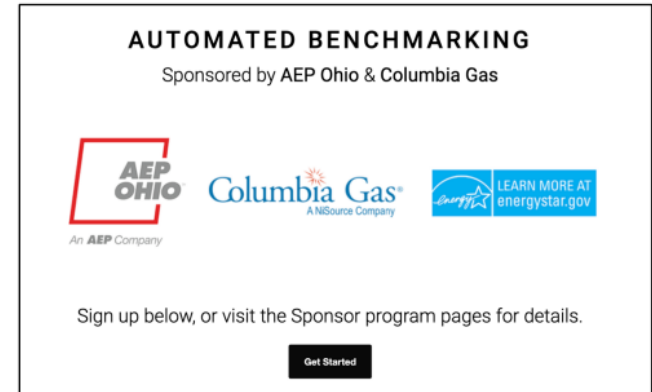
1. Via Automated Benchmarking

2. Via Direct Entry in Portfolio Manager

### Establishing an Account on Benchmarking.Energy

This process is intended for customers who do not have an account on Benchmarking.Energy and do not have existing ENERGY STAR Portfolio Manager® accounts.

1. Navigate to <https://www.benchmarking.energy/> and click on the "Get Started" button.

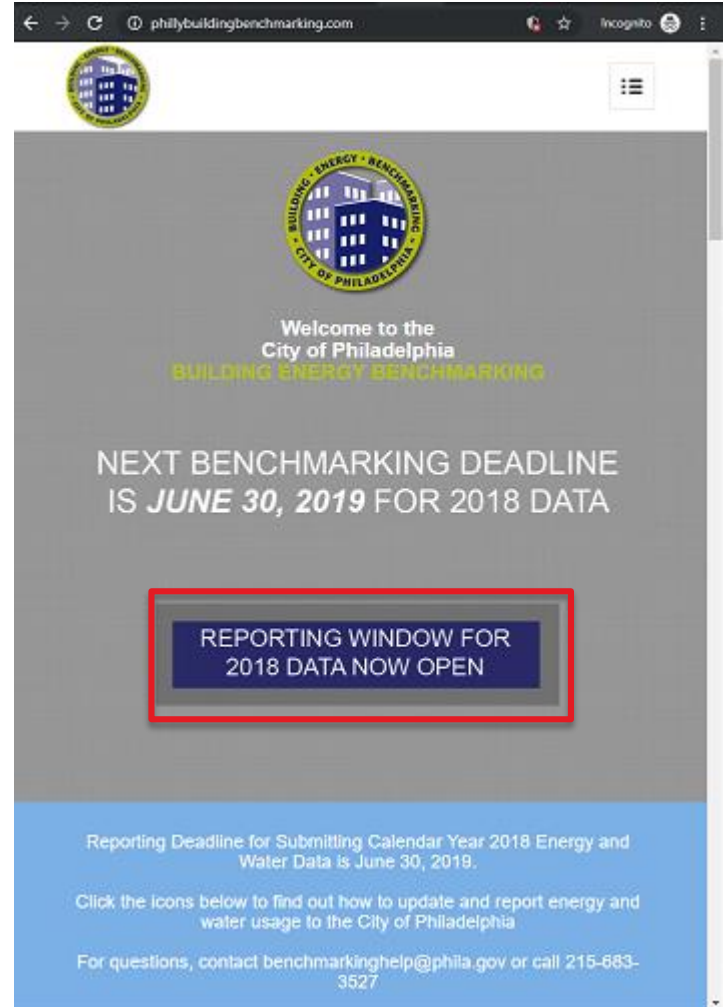


## Step 3: report to City

### 3 Report To City

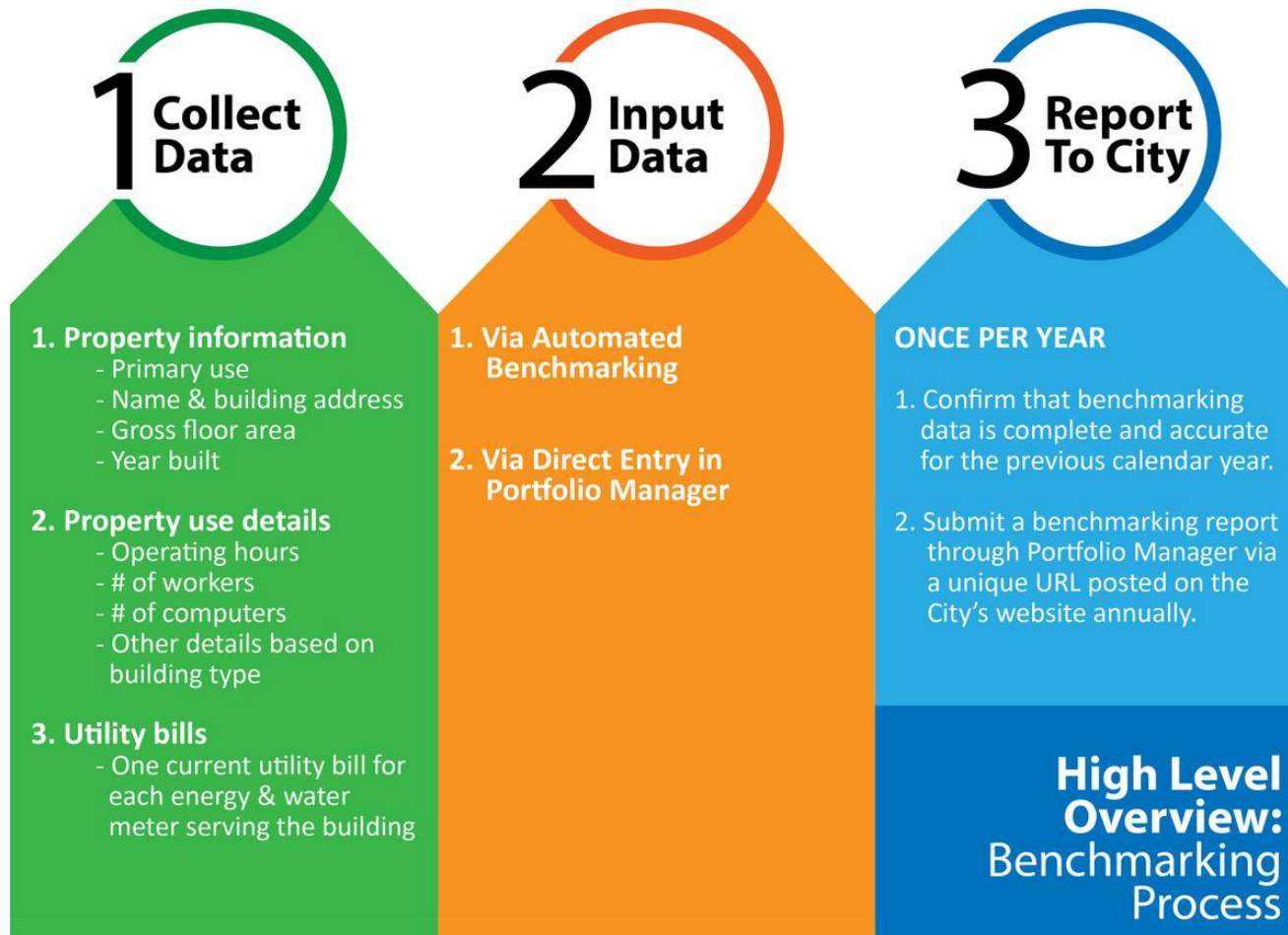
#### ONCE PER YEAR

1. Confirm that benchmarking data is complete and accurate for the previous calendar year.
2. Submit a benchmarking report through Portfolio Manager via a unique URL posted on the City's website annually.



The screenshot shows a web browser window with the URL [phillybuildingbenchmarking.com](http://phillybuildingbenchmarking.com). The page features the City of Philadelphia logo and a circular emblem with the text "BUILDING ENERGY BENCHMARKING CITY OF PHILADELPHIA". Below the logo, it says "Welcome to the City of Philadelphia BUILDING ENERGY BENCHMARKING". A prominent message states: "NEXT BENCHMARKING DEADLINE IS **JUNE 30, 2019** FOR 2018 DATA". A red-bordered box highlights a button that reads "REPORTING WINDOW FOR 2018 DATA NOW OPEN". At the bottom, a blue footer contains the text: "Reporting Deadline for Submitting Calendar Year 2018 Energy and Water Data is June 30, 2019. Click the icons below to find out how to update and report energy and water usage to the City of Philadelphia. For questions, contact [benchmarkinghelp@phila.gov](mailto:benchmarkinghelp@phila.gov) or call 215-683-3527".

# Benchmarking compliance process



## Metrics Calculator



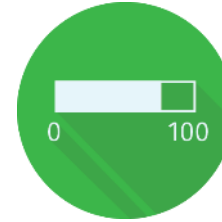
**Energy use**  
Source, site,  
weather  
normalized,  
demand



**Water use**  
Water use  
intensity,  
Water Score  
(Multifamily)



**Waste &  
Materials**  
Waste  
intensity,  
diversion rate



**1-100  
ENERGY STAR  
score**



**GHG  
emissions**  
Indirect,  
direct, total,  
avoided



## Comparable Metrics

### 1—100 ENERGY STAR Score

Score of 50 represents national median

Eligible property types:

- Office buildings, multifamily housing, hospitals, hotels, supermarkets, retail stores, worship facilities, senior care facilities, bank branches, & more

### Energy Use Intensity (EUI)

EUI is the energy used per square foot

National median site EUI:

- Office = 52.9 kBtu/ft<sup>2</sup>
- Hospital = 234.3 kBtu/ft<sup>2</sup>
- Strip mall = 103.5 kBtu/ft<sup>2</sup>

# Peer Sharing



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# Huntington

- Rebecca Karason, Director of Energy & Sustainability

# Discussion on Policy Direction



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# Policy variable: building type



Commercial

Property Type



Public

Property Type



Multifamily


Property Type



Industrial

Property Type

# Policy variable: building size




>50,000 sq. ft.

Property Size



>10,000 sq. ft.

Property Size



>25,000 sq. ft.

Property Size



All

Property Size

# Buildings in Columbus

Building Size	# of Buildings	Total Square Footage	Percent of Building Stock by #	Percent of Building Stock by Square Footage
10k & up	8,088	419,085,189	38%	88%
25k & up	4,015	355,200,819	19%	74%
50k & up	2,122	288,371,336	10%	60%
<i>All buildings</i>	<i>21,452</i>	<i>478,341,346</i>	<i>100%</i>	<i>100%</i>

Source: Franklin County Auditor's Office

## Compared by square footage

City	Total # of Buildings	Total Square Footage
New York City	33,000	2.8 billion
Chicago	3,500	900 million
Los Angeles	14,000	900 million
Atlanta	2,900	402 million
Kansas City	1,500	400 million
Philadelphia	2,900	390 million
Denver	3,000	360 million
Washington DC	2,000	357 million
Columbus	4,015	355 million
Seattle	3,300	323 million
Columbus	2,122	288 million
Boston	1,600	250 million
San Jose	2,500	250 million
San Francisco	2,300	203 million
Fort Collins	2,250	47 million

## Compared by # of buildings

City	Total # of Buildings	Total Square Footage
New York City	33,000	2.8 billion
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San Jose	2,500	250 million
San Francisco	2,300	203 million
Fort Collins	2,250	47 million
Columbus	2,122	288 million
Washington DC	2,000	357 million
Boston	1,600	250 million
Kansas City	1,500	400 million

# Policy variable: data transparency metrics

Data Field	How Data are Used
Property Name, Address, Size	<ul style="list-style-type: none"> <li>Allows for geographic comparison across streets, neighborhoods, and zip codes</li> <li>Understand energy consumption within various geographic constraints</li> </ul>
ENERGY STAR Score	<ul style="list-style-type: none"> <li>Normalizes for climate and operational characteristics</li> <li>Allows performance of buildings to be compared in a standardized way</li> </ul>
Site EUI or Source EUI (kBtu/sq. ft.)	<ul style="list-style-type: none"> <li>Allows for energy use to be compared normalizing for the size of the building</li> </ul>
Weather Normalized Site or Source EUI (kBtu/sq. ft)	<ul style="list-style-type: none"> <li>Normalizes against the energy use the property would have consumed during 30-year average weather conditions</li> </ul>
Total GHG Emissions (mt CO <sub>2</sub> e) or Total GHG Emissions Intensity (kg CO <sub>2</sub> e/sq. ft.)	<ul style="list-style-type: none"> <li>Allows for the relative GHG emissions impact of a building's operation to be compared with other buildings</li> </ul>

# Policy variable: data transparency visuals

## Visualizations

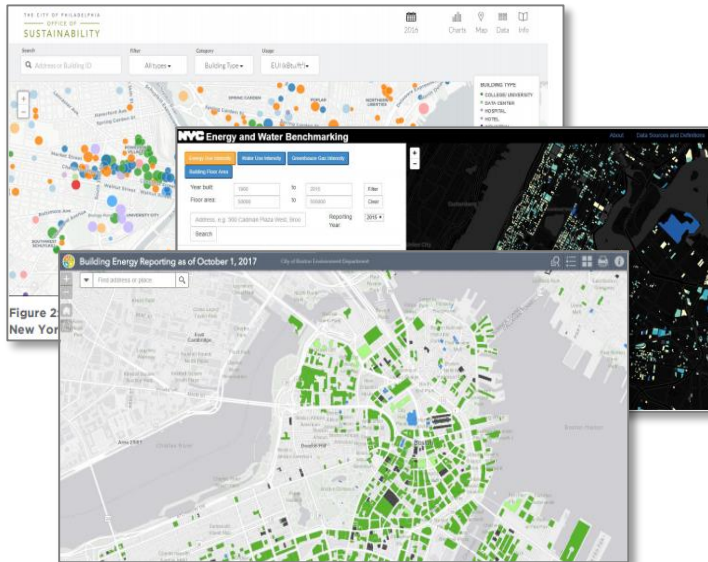


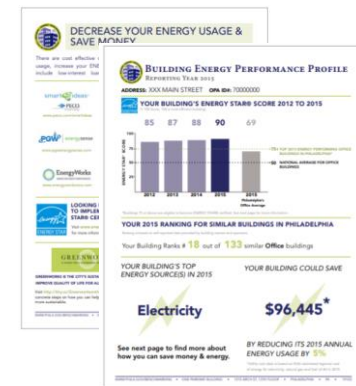
Figure 2  
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Visualizations for the Cities of Philadelphia, New York, and Boston (top to bottom)

## Scorecards



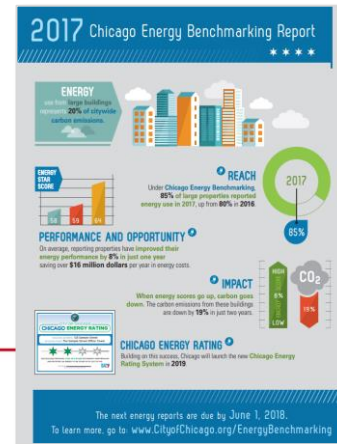
City of Seattle



City of Philadelphia

## Infographics

City of Chicago





# Looking Ahead



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## Next month...

- Continuation of policy discussion including:
  - Rules for exemptions
  - Schedule for initial compliance
  - Schedule for transparency
  - Supporting programs

## Upcoming meeting schedule

- September 5, 2019 - *Setting the Context*
- October 8, 2019 - *Building Performance Policy Design Part I*
- November 12, 2019 - *Building Performance Policy Design Part II*
- December 10, 2019 - *Confirming Advisory Group Recommendations*
- January 14, 2020 - *Policy Implementation*

All meetings held from **9am-11am** at the Coleman Government Center, 111 N. Front Street, 2nd Floor Hearing Room.

# For More Information:

**Visit us online at** [columbus.gov/sustainable/benchmarking](http://columbus.gov/sustainable/benchmarking)

**Email us at** [benchmarking@columbus.gov](mailto:benchmarking@columbus.gov)

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**Alana Shockey,** [arshockey@columbus.gov](mailto:arshockey@columbus.gov)

# The End

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