

AGENDA
STUDY SESSION MEETING OF THE CITY COUNCIL
VIRTUAL MEETING
CITY OF LAKEWOOD, COLORADO
VIRTUAL MEETING
MARCH 3, 2025
7:00 PM

To watch the Council meeting live, please use either one of the following links:

City of Lakewood Website: [Lakewood.org/CouncilVideos](https://lakewood.org/CouncilVideos)

Lakewood Speaks: Lakewoodspeaks.org

The City of Lakewood does not discriminate on the basis of race, age, national origin, color, creed, religion, sex, sexual orientation or disability in the provision of services. People needing reasonable accommodation to attend or participate in a City service program can call 303-987-7080 or TDD 303-987-7057. Please give notice as far in advance as possible so we can accommodate your request.

In accordance with City Council Policy 5.1(A), all virtual meeting participants are advised that technological issues, whether caused by the City's equipment or the user's equipment, shall not be grounds for canceling a public meeting.

How to Connect to Provide Public Comment: Online participants may post written comments of any length to LakewoodSpeaks.org, an online forum for public comments.

ITEM 1 – CALL TO ORDER

ITEM 2 – ROLL CALL

ITEM 3 – BUILDING PERFORMANCE PROGRAM - ENERGY BENCHMARKING

ITEM 4 – COMMITTEE REPORTS

ITEM 5 – ADJOURNMENT

STAFF MEMO

DATE OF MEETING: MARCH 3, 2025 / AGENDA ITEM NO. 3

To: Mayor and City Council

From: Travis Parker, Chief of the Sustainability & Community Development Branch
Jeffrey Wong, Principal Sustainability Planner

Subject: **Building Performance Program - Energy Benchmarking**

SUMMARY STATEMENT: During the March 3, 2025 City Council Study Session, staff will present an overview of the first phase of a proposed building performance program for Lakewood's largest buildings, part of a larger strategy to reduce citywide building greenhouse gas (GHG) emissions. The first phase is a building energy benchmarking program that would require property owners of the city's largest buildings to report their energy use on an annual basis.

BACKGROUND INFORMATION: The city's latest Greenhouse Gas (GHG) Inventory from 2021 shows that the building energy sector was the largest contributor of GHG emissions in Lakewood, representing 42% of overall emissions. While sustainable development standards in the Zoning Ordinance address GHG emissions mitigation for new construction, they do not include solutions for emissions reductions for the majority of the city's existing building stock. Staff is exploring a building performance program for Lakewood's largest buildings as part of a larger strategy to meet the city's GHG emissions reduction goals. The first phase of the project is to develop an energy benchmarking program, which is the focus of this study session. The second phase of the project is the development of a building performance program that would set individual long-term energy or emissions targets for Lakewood's largest buildings in support of the city's goal of net zero 2050 GHG emissions.

Energy benchmarking is the regular monitoring and reporting of an individual building's energy consumption to track changes over time (typically one year) and monitor progress towards increased efficiency and decreased GHG emissions. The data can inform building owners and managers on their existing energy use, how their properties perform compared to other buildings of similar type, and potential improvements that can be made to lower utility bills. An EPA study of over 35,000 buildings showed that on average, benchmarking can reduce annual energy consumption for a building by 2.4%. Other jurisdictions across the country have already adopted building benchmarking and building performance standard programs (see Attachment 1). This includes the State of Colorado, which requires property owners of all buildings 50,000+ square feet in gross floor area to benchmark and report their energy use on an annual basis.

Following community engagement and advisory group meetings the past several months, staff would like feedback from City Council on a proposed benchmarking program that would apply to all multifamily, commercial (including manufacturing), and public buildings with gross floor areas of 10,000 square feet and above. Preliminary analysis of the city's existing building stock shows that this square footage threshold would include about 830 buildings, including about 200 buildings that already must comply with state benchmarking requirements. Staff would plan on providing several resources for property owners to enable successful compliance with a Lakewood benchmarking program.

BUDGETARY IMPACTS: No budgetary impacts are anticipated with the Study Session. If a benchmarking ordinance was adopted in the future, the budgetary impact of the benchmarking program is unknown at this time, due to the uncertain status of the \$5 million grant that was awarded to the City by the Department of Energy in 2024 in support of this project.

STAFF RECOMMENDATIONS: Because this is a Study Session, no specific action is needed from City Council aside from providing general feedback.

ALTERNATIVES: Alternatives at the direction of City Council.

PUBLIC OUTREACH: This item has been promoted through the regular communication channels to be considered by the Lakewood City Council.

NEXT STEPS: Staff is closely monitoring the status of the grant award and also exploring funding alternatives to enable bringing a proposed benchmarking policy to City Council for consideration in the near future.

ATTACHMENTS:

1. Attachment 1 - Examples of Building Energy Benchmarking and Performance Programs
2. Attachment 2 - Benchmarking CC Study Session 3-3-25 Slides

REVIEWED BY: Kathleen E. Hodgson, City Manager
Benjamin B. Goldstein, Deputy City Manager
Alison McKenney Brown, City Attorney

Attachment 1 - Examples of Building Energy Benchmarking and Performance Programs

1. Building Performance Colorado – State of Colorado

Description: Building Performance Colorado (BPC) is a statewide program administered by the Colorado Energy Office aimed at increasing energy efficiency and decreasing greenhouse gas (GHG) emissions in the building sector. By measuring and tracking energy use in buildings, building owners and tenants can better understand how their energy performance compares to similar buildings and identify opportunities to cut energy waste.

Applicability: Large commercial, multifamily, and public buildings 50,000 square feet or larger.

Energy Benchmarking Requirements: Owners must report whole-building energy use data on an annual basis.

Benchmarking Fee: \$100 annually (public buildings exempt).

Building Performance Standards: In 2023, the state will establish rules for Building Performance Standards (BPS) to meet building sector GHG reduction targets of 7% by 2026 and 20% by 2030 from a 2021 baseline. The BPS will establish energy performance targets for each applicable building to meet after a set amount of time; no action is currently required.

2. Energize Denver – City and County of Denver, Colorado

Description: Energize Denver is a building energy benchmarking performance program aimed at reducing GHG emissions. By moving building owners to electrify their heating and cooling systems and improve energy performance, Denver will not only reduce greenhouse gas emissions from commercial and multifamily buildings by 80% by 2040, but also lower energy bills and improve public health outcomes.

Applicability: Existing commercial and multifamily buildings 5,000 SF or larger.

Energy Benchmarking Requirements: For buildings 25,000 SF or larger, owners must report whole-building energy use data on an annual basis.

Benchmarking Fee: None

Building Performance Standards: The Energize Denver Program has different requirements depending on building size.

- Energy Use Intensity (EUI) targets have been established for buildings 25,000 sq. ft. and larger. These buildings must meet a final EUI target by 2030, with interim targets in 2024 and 2027. There are electrification requirements when replacing space and water heating equipment.
- Buildings between 5,000 and 24,999 SF are required to meet lighting (90% LED) OR renewable energy requirements (minimum 20% of annual energy use). There are electrification requirements when replacing space and water heating equipment.
- Existing buildings under 5,000 SF are not subject to performance requirements but are still subject to the requirements to partially electrify their buildings when replacing gas-fired heating and cooling equipment at the end of system life.

3. Building Energy Saving Ordinance – City of Chula Vista, California

Description: In support of the City of Chula Vista’s Climate Action Plan, the City adopted the Building Energy Saving Ordinance in early 2021. Some of the key benefits of this ordinance include the following:

- Reducing greenhouse gas emissions in Chula Vista
- Helping building owners save money through cost-effective efficiency measures
- Improving the quality of Chula Vista’s building stock
- Better efficiency standards for air quality which positively impacts both residents and community members

Applicability: Commercial, industrial, and multifamily buildings 20,000 square feet or larger.

Energy Benchmarking Requirements: Owners must report whole-building energy use data on an annual basis.

Benchmarking Fee: None

Building Performance Standards: After 5 and 10 years, buildings not qualified as high-performance may have to comply with conservation measures, prescriptive upgrades, or minimum improvements to reach a target EUI. Every 5 years, an energy audit and retro-commissioning (>50,000 SF of conditioned space) are required.



Developing a Building Energy Benchmarking Program for Lakewood's Largest Buildings

**City Council Study Session
March 3, 2025**

Building Energy Benchmarking City Council Study Session

Building Performance Program for Lakewood's Largest Buildings

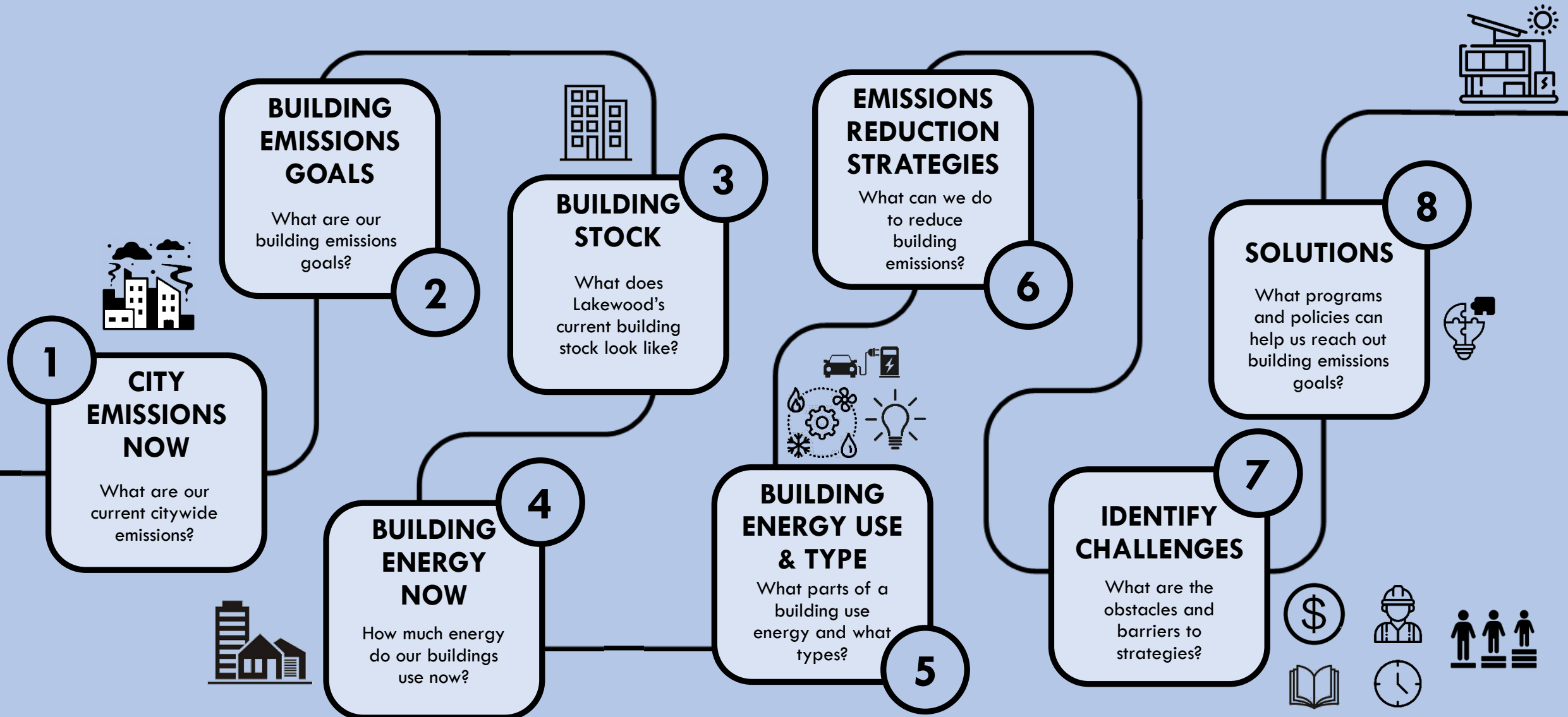
Phase 1: Benchmarking development

- Annual tracking and reporting of energy use to measure performance of Lakewood's largest existing buildings

Phase 2: Building Performance Program development

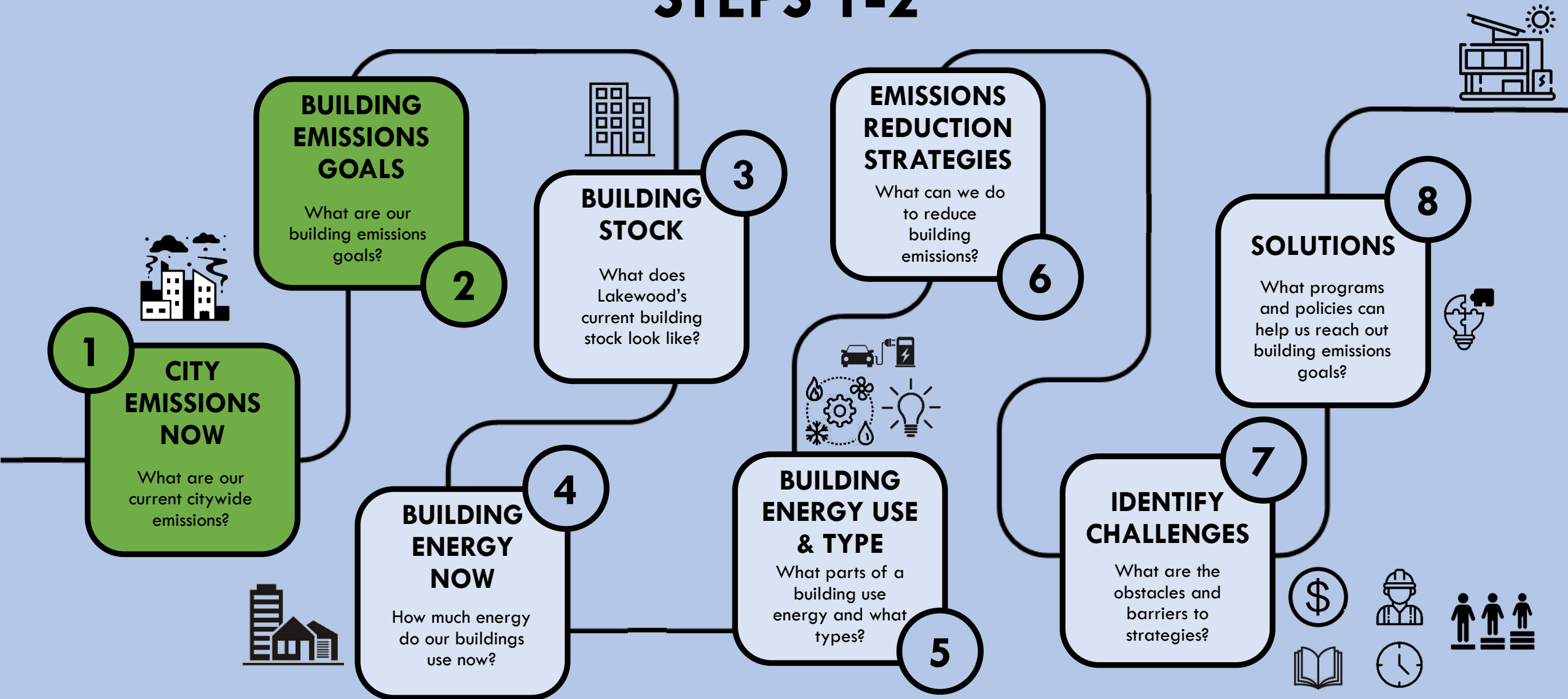
- Set long-term energy/emissions targets for existing large buildings and provide roadmap for long-term efficiency improvements, resources, and financial incentives to achieve improved building performance

BUILDING EMISSIONS REDUCTION ROADMAP



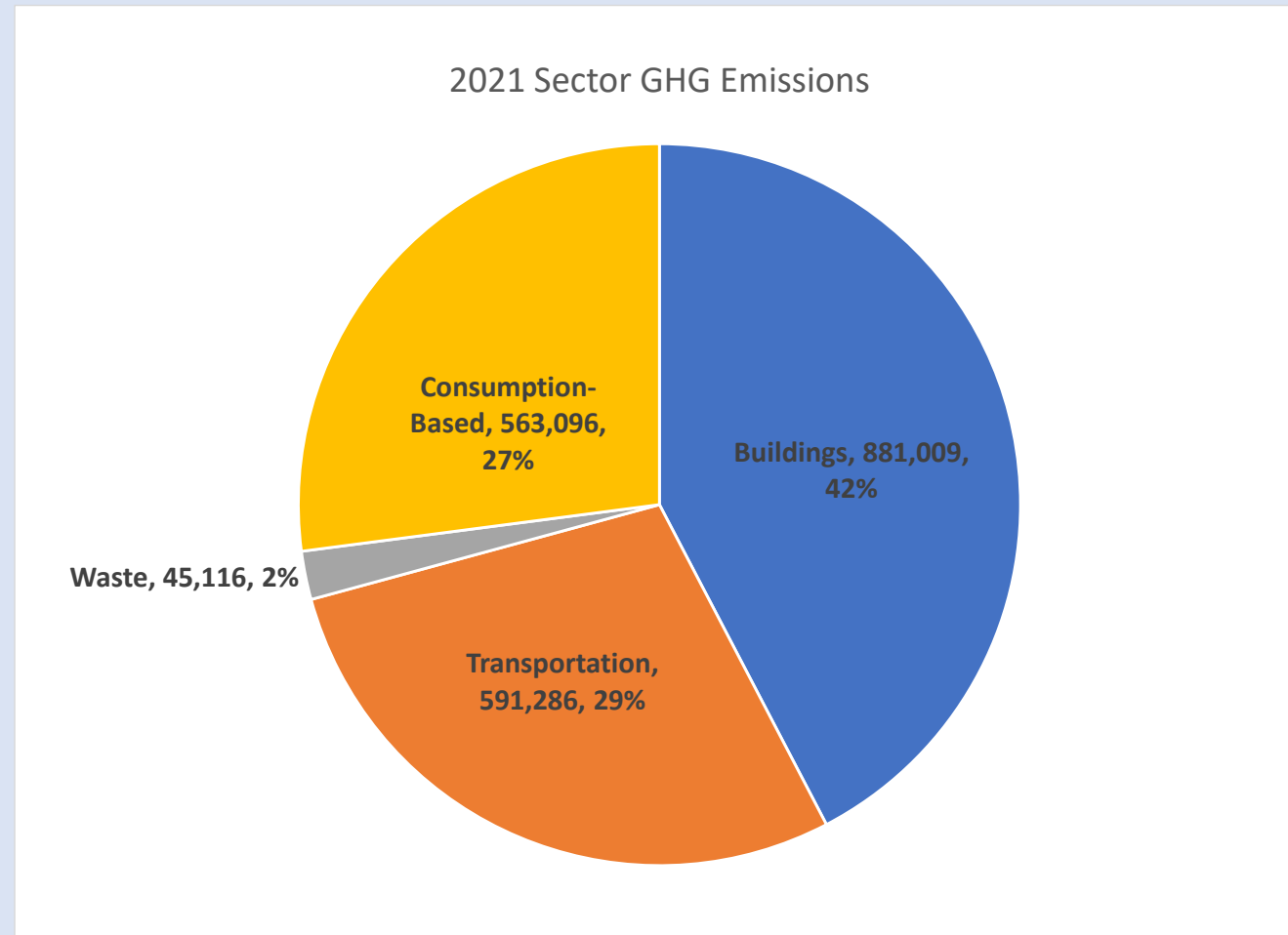
BUILDING EMISSIONS REDUCTION ROADMAP

STEPS 1-2



Building Energy Benchmarking City Council Study Session

2021 GHG Emissions Inventory

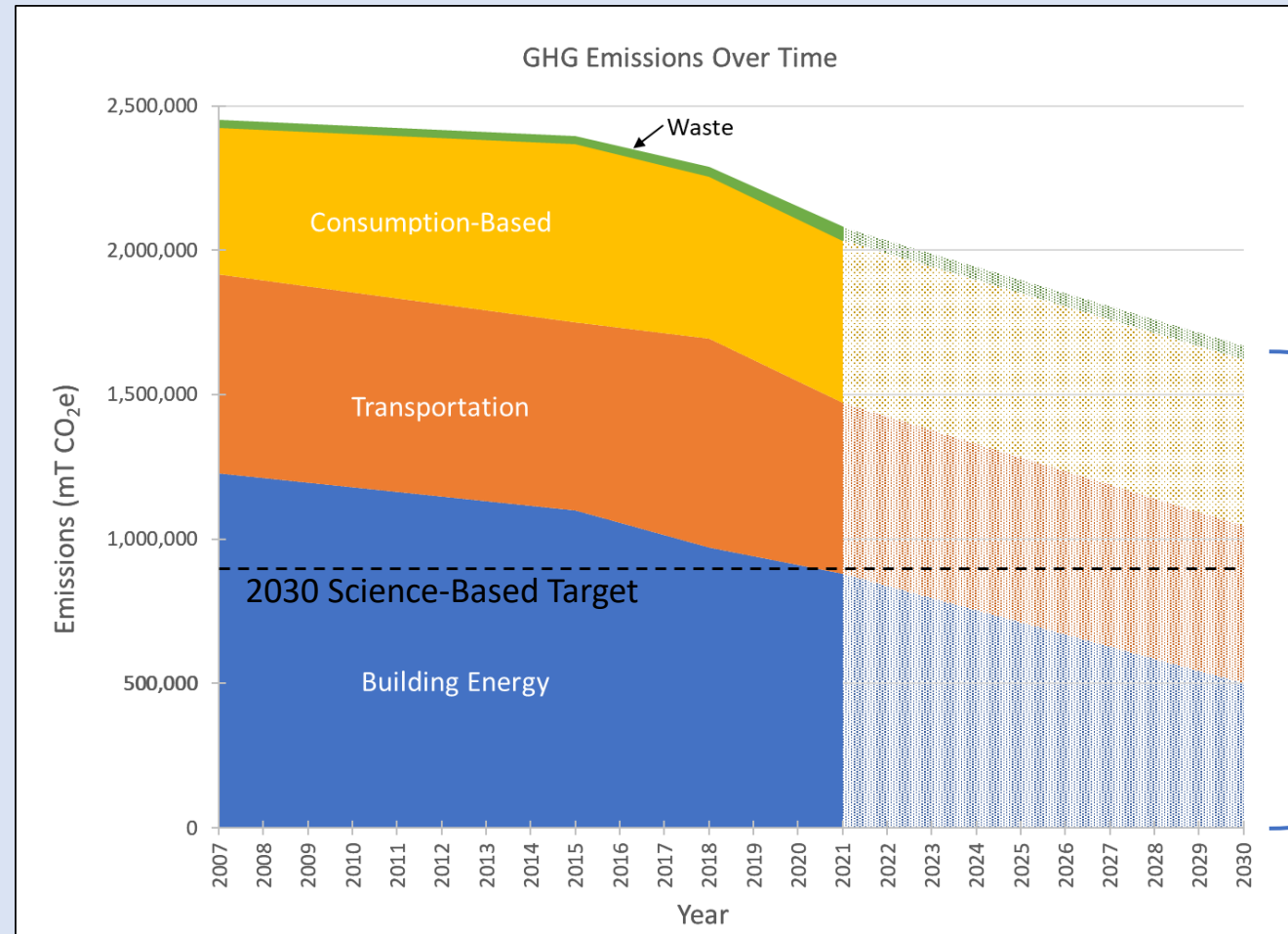


Building Energy Benchmarking City Council Study Session

GHG Emissions Overview & Targets

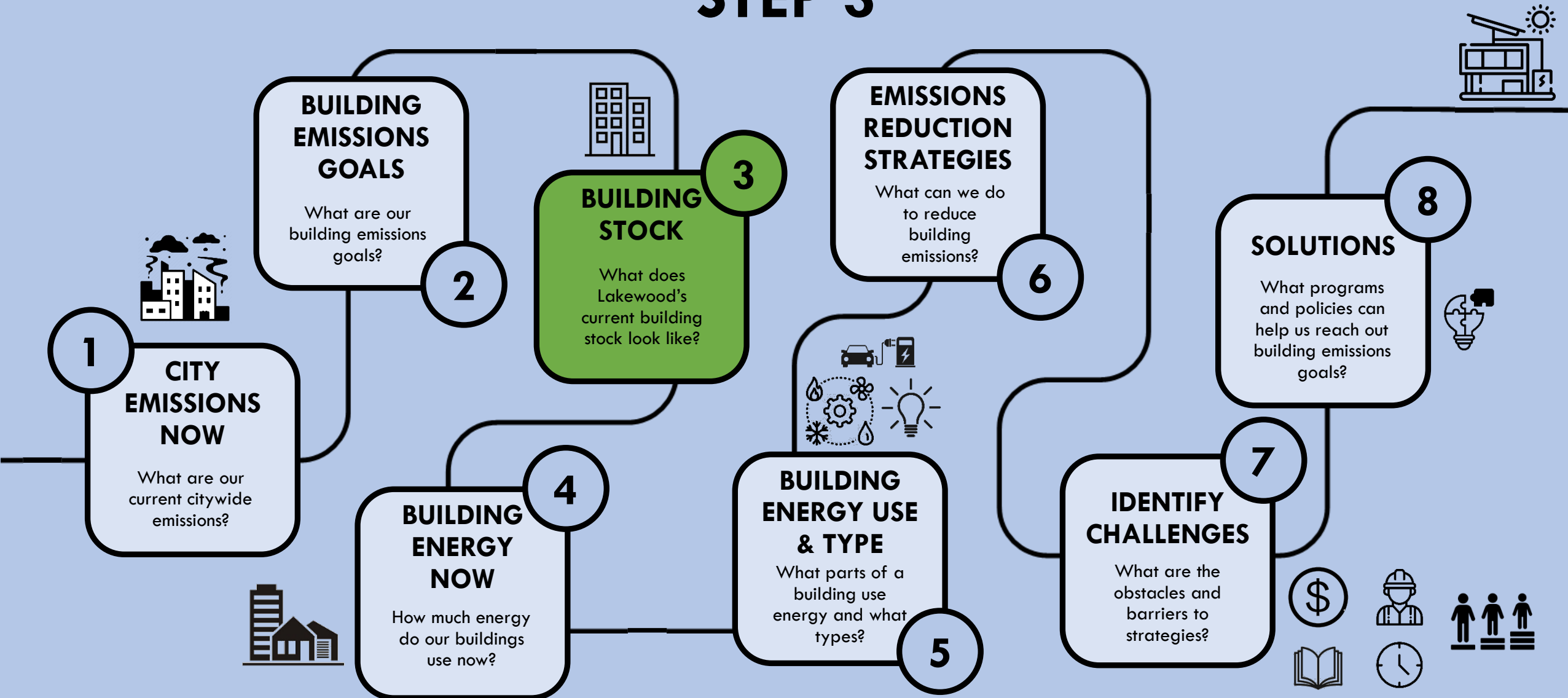
GHG Reduction Goals: Science-Based Targets

1. 60.7% below 2018 by 2030
2. Net zero by 2050



BUILDING EMISSIONS REDUCTION ROADMAP

STEP 3



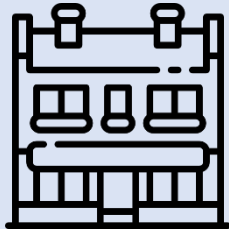
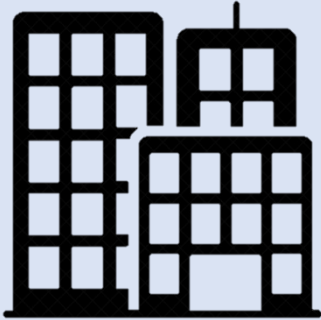
Building Energy Benchmarking City Council Study Session

Lakewood Building Stock Profile

Total Structures:	50,000
Total Gross Floor Area:	119.4 million SF
Total 2021 Building GHG Emissions	881,000 mT CO ₂ e

Building Energy Benchmarking City Council Study Session

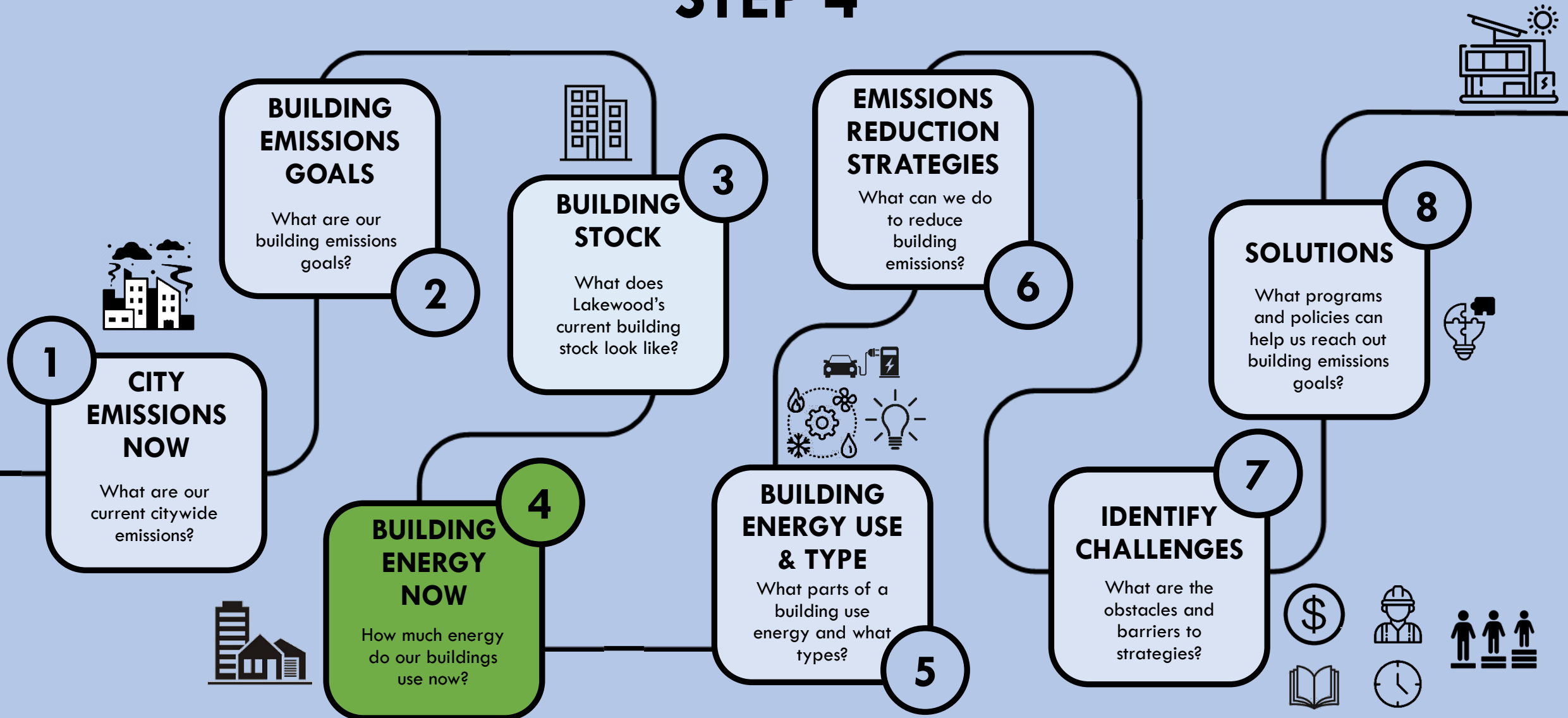
Lakewood Building Stock Profile by Square Footage

					
Category (SF):	<u>< 5,000</u>	<u>5,000 – 9,999</u>	<u>10,000 – 24,999</u>	<u>25,000 – 49,999</u>	<u>>= 50,000</u>
Structures:	48,500	590	435	195	199
Gross Floor Area (SF):	77 million	4 million	6.8 million	6.9 million	24.6 million
% Total GHG Emissions:	48%	5%	8%	8%	31%
GHG Emissions / Structure (mT CO ₂ e):	9	71	164	383	1,326

Note: Data is approximate

BUILDING EMISSIONS REDUCTION ROADMAP

STEP 4



Building Energy Benchmarking City Council Study Session

How much energy do our buildings use now?

- Existing data sources for building energy use
 - CBECS & Energy Star Portfolio Manager: Regional average data based on building type and climate zones
 - Xcel Energy: Aggregated data categorized as residential or non-residential
- No localized Lakewood energy data at individual building level
- Data gap remains at the individual building level → communities are turning to energy benchmarking programs

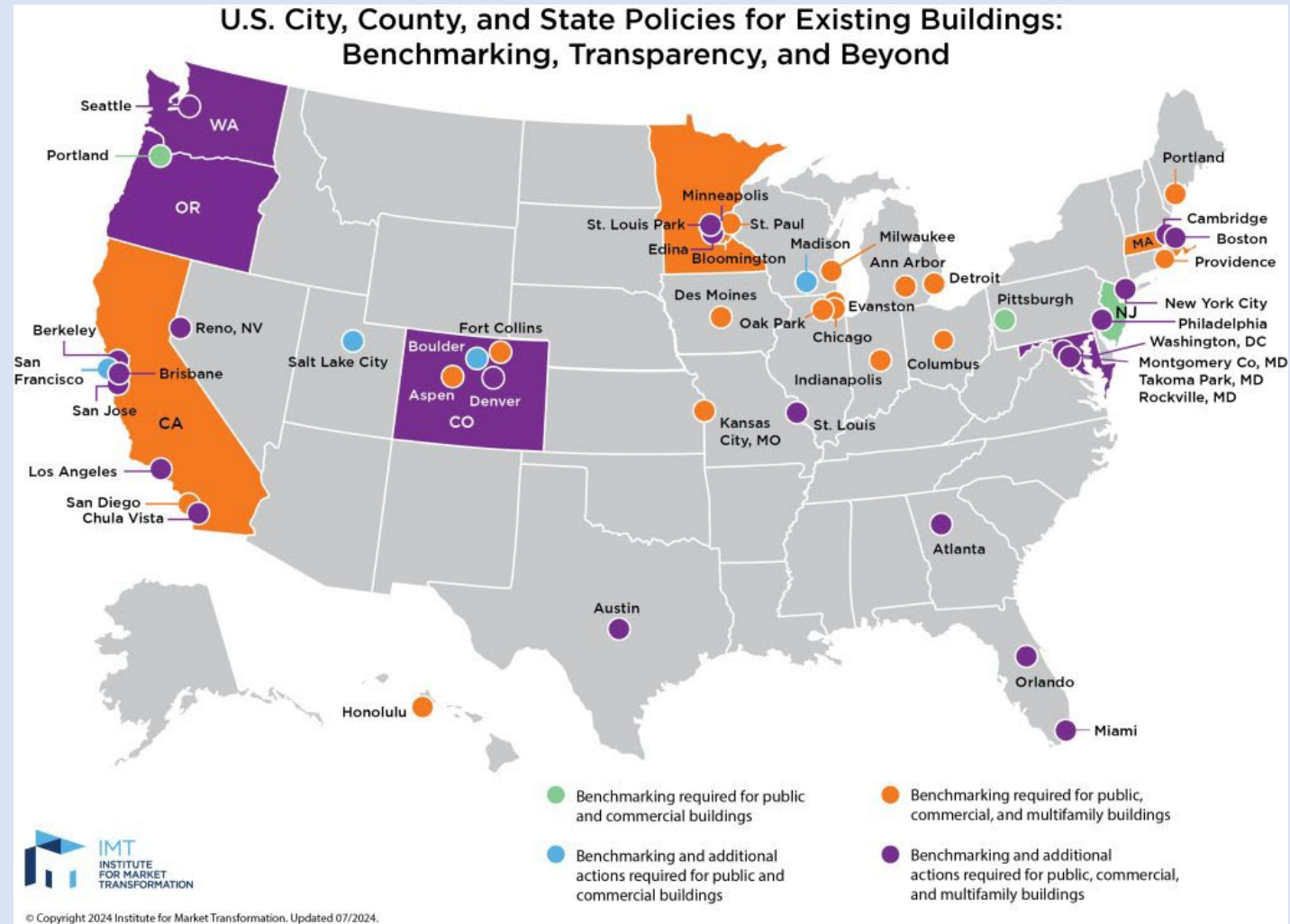
Building Energy Benchmarking City Council Study Session

How much energy do our buildings use now?
Energy Benchmarking

- Measure and report energy performance of a single building over a period of time
- Compare to other buildings of similar type to gauge performance
- 2.4% annual energy savings
- Provides baseline for individual building energy use to inform Building Performance Standards

Building Energy Benchmarking City Council Study Session

Which communities are adopting Benchmarking and Building Performance Standards?



Building Energy Benchmarking City Council Study Session

What are the benefits of building energy benchmarking?

Building Owner / Occupant



Lower utility bills

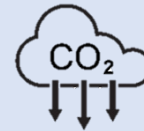


Prioritize efficient building improvements



Increase occupant comfort and building quality

City



Decrease energy use and GHG emissions



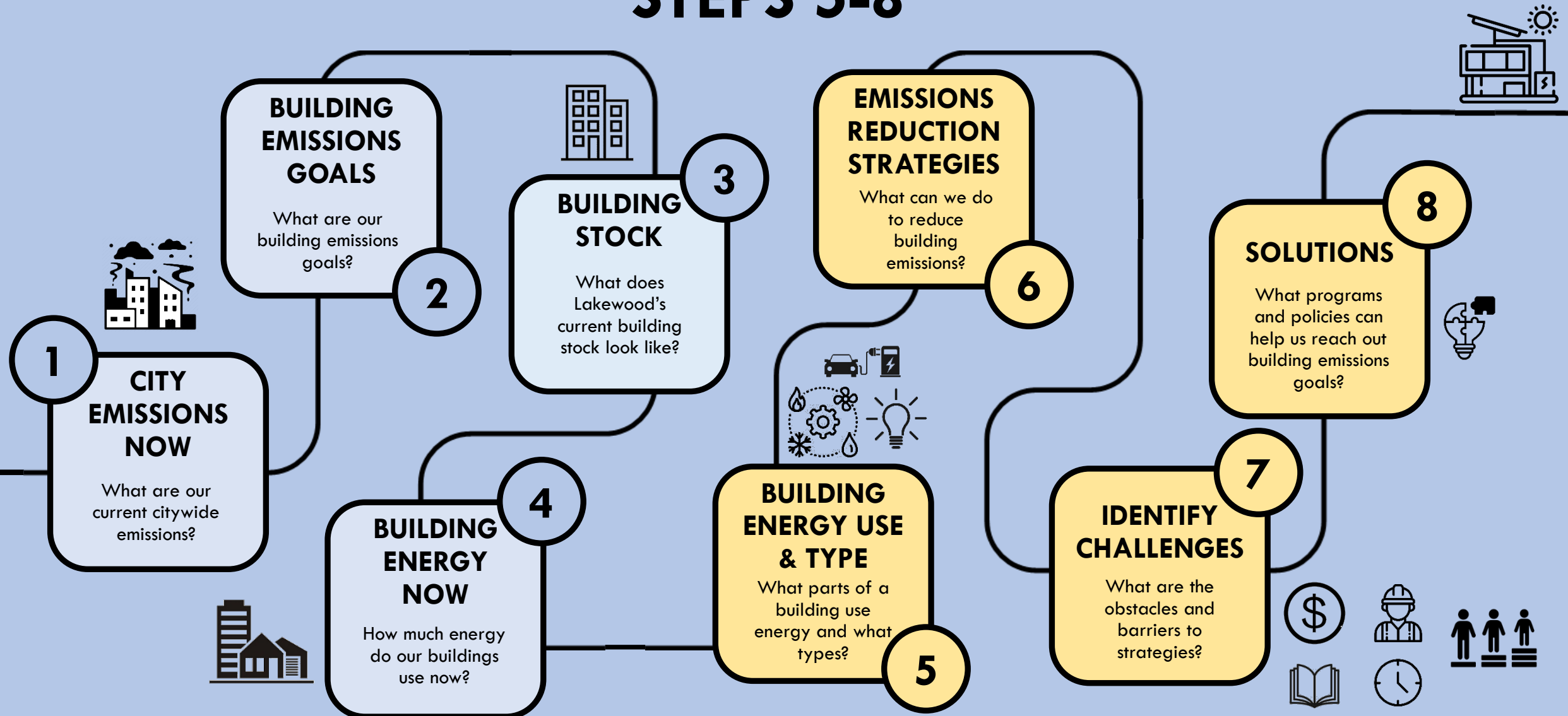
Measure progress towards emissions goals



Increase economic investment

BUILDING EMISSIONS REDUCTION ROADMAP

STEPS 5-8

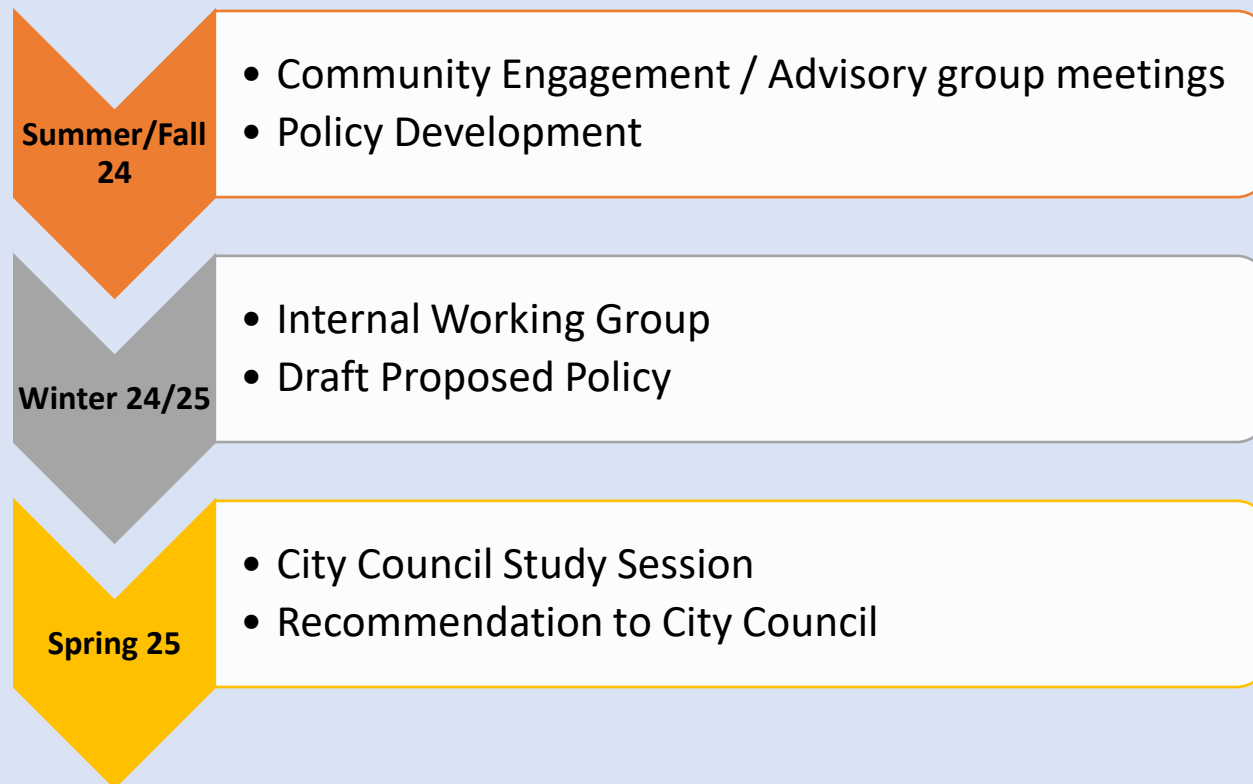


Building Energy Benchmarking City Council Study Session

Building Energy Now: Proposed Benchmarking Policy

Building Energy Benchmarking City Council Study Session

Benchmarking Development Timeline



Ongoing Stakeholder Engagement



Note: Assumes awarded DOE grant funding is released by May 2025

Building Energy Benchmarking City Council Study Session

Ongoing Stakeholder Engagement



Advisory Group Representatives

- City Commissions: *LAC, Planning Commission reps*
- Business: *Alameda Connects, 1st Bank, Building Owners and Manager Association, Lafayette Company (Alameda Crossing)*
- Affordability: *MetroWest Housing, Energy Outreach Colorado*
- Finance: *C-PACE*
- Market Transformation: *USGBC, Southwest Energy Efficiency Project*
- Education: *JeffCo Public Schools, Red Rocks CC*
- Technical / industry experts

Building Energy Benchmarking City Council Study Session

Benchmarking Program Goals

We want a benchmarking program that:

- Is effective, implementable, and reflective of community priorities
- Increases energy efficiency + lowers GHG emissions
- Addresses historic and systemic inequities (energy burden, housing affordability, etc.)
- Presents solutions for identified risks, barriers, and unintended outcomes
- Aligns with future Building Performance program

Building Energy Benchmarking City Council Study Session

Considerations for Lakewood's approach to Benchmarking

- Building applicability (square footage, use type, other)
- Impact and cost to building owner and occupants
- Resources needed for building owners
- Equity – Affordability, energy burden, time
- City's program administration requirements

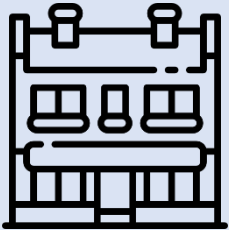
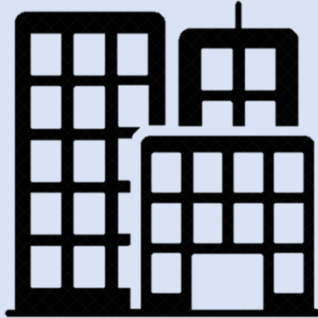
Building Energy Benchmarking City Council Study Session

Proposed Benchmarking Applicability

- All Multi-family and Non-Residential buildings $\geq 10,000$ SF gross floor area
 - Multi-family: Shared water heating or air heating/cooling systems
 - Non-residential includes commercial, public, and manufacturing buildings
- Buildings $\geq 50,000$ SF (~200 buildings) will report to both Lakewood and State, but only subject to State enforcement
- Federal buildings not included

Building Energy Benchmarking City Council Study Session

Proposed Benchmarking Applicability – Building Stock Profile

				
Category (SF):	<u>10,000 – 24,999</u>	<u>25,000 – 49,999</u>	<u>>= 50,000</u>	<u>10,000+ Total</u>
Structures:	435	195	199	829
Gross Floor Area (SF):	6.8 million	6.9 million	24.6 million	38.3 million
% Total GHG Emissions:	8%	8%	31%	47%

~2% Building Emissions Reduction by 2030 compared to 2018 baseline;
\$4.5 million in annual utility bill savings

Building Energy Benchmarking City Council Study Session

Proposed Exemptions / Waivers

- Property owner responsible for submitting waiver request
- Qualifying exemptions
 - Proof of square footage less than minimum threshold
 - Unoccupied or limited occupancy building entire year (50% is common)
 - no Certificate of Occupancy
 - Renovation for entire year
 - Demolition permit has been issued
 - Financial hardship
 - Manufacturing / Industrial: Show proof of energy efficiency plan

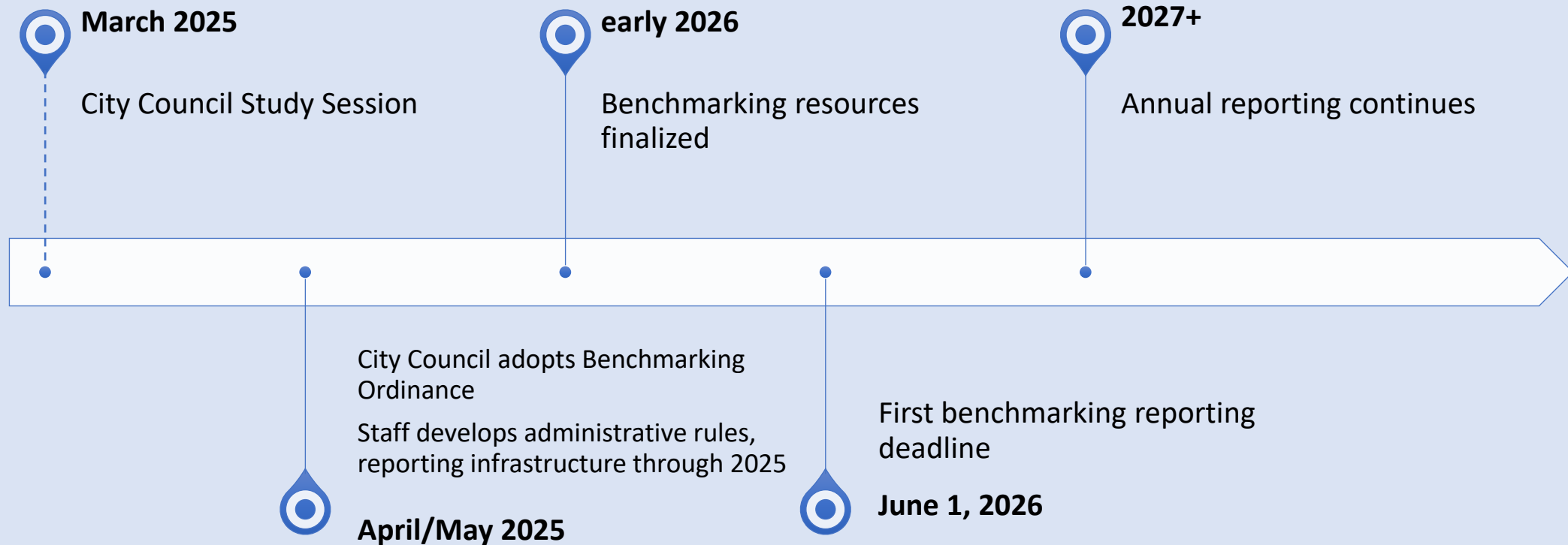
Building Energy Benchmarking City Council Study Session

Proposed Benchmarking Compliance & Enforcement

- Owners submit benchmarking data annually on June 1, no fee to submit
- Violation: Owner doesn't submit annual benchmarking data or a waiver/exemption on June 1
- Notice of Violation for non-compliance
 - 90-days to correct in 2026
 - 30-days to correct in 2027+
- Civil penalty: \$2,000 per violation (annually)
 - Survey of 3rd party benchmarking services: \$295-\$850 / building (3 responses)
 - Aligned with State and Denver violation amounts

Building Energy Benchmarking City Council Study Session

Proposed Benchmarking Timeline (Phase 1)



Note: Assumes awarded DOE grant funding is released by April 2025

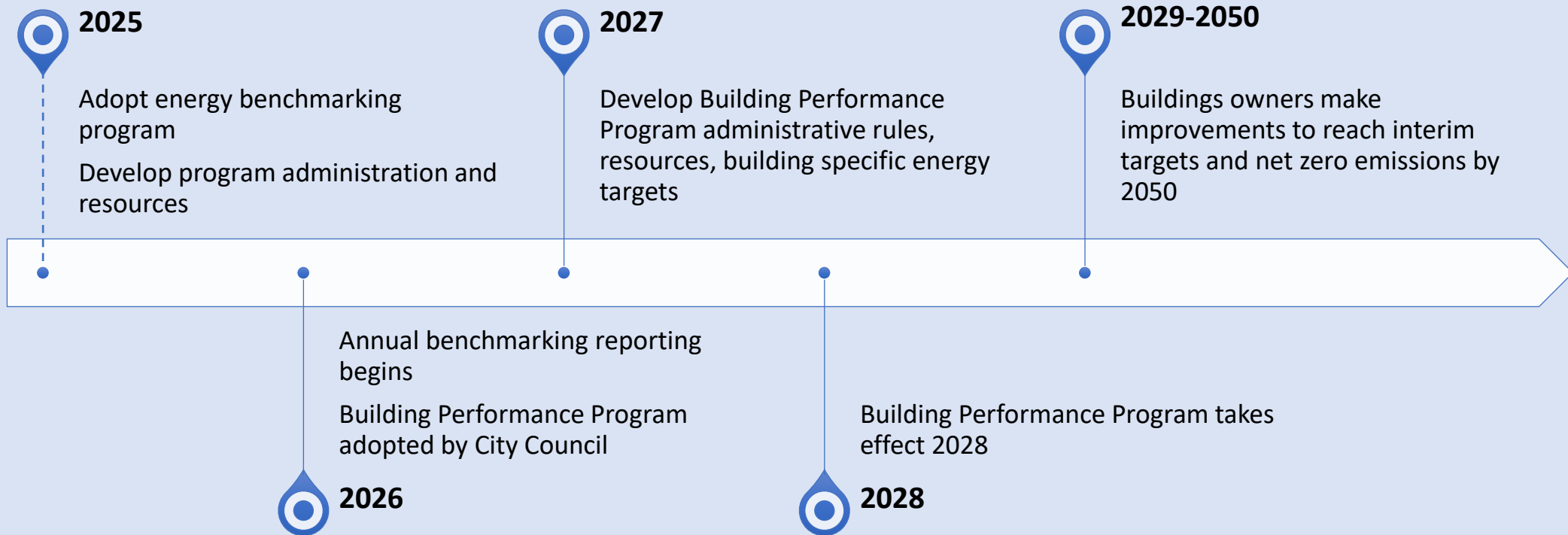
Building Energy Benchmarking City Council Study Session

Benchmarking Informs Building Performance Standards (Phase 2)

- Benchmarking generally precedes Building Performance Standards (BPS)
- BPS establishes energy / emissions performance targets for Lakewood's largest buildings
 - Annual benchmarking creates baseline and tracks progress towards BPS
- 2050 Net Zero emissions goal
- Drive energy efficiency, electrification improvements, and renewable energy adoption

Building Energy Benchmarking City Council Study Session

Anticipated Long-Term Building Performance Timeline (Phase 2)



Note: Assumes awarded DOE grant funding is released by April 2025

Building Energy Benchmarking City Council Study Session

Benchmarking from the Property Owner's POV

- Education and Awareness
 - Property Owner receives program notifications by mail
 - Additional touchpoints through City communication channels, business associations
- Reporting
 - Setup EnergyStar Portfolio Manager (ESPM) account
 - Connect Xcel Energy account to ESPM
 - Add City of Lakewood as reporting entity
 - Submit data once a year
- Compliance
 - Property Owner receives multiple reporting deadline reminders by mail and other channels
 - Property owners reports data or receives approved waiver
 - Notices of Violation with grace period for compliance
 - Property Owner is issued a \$2,000 civil penalty for non-compliance

Building Energy Benchmarking City Council Study Session

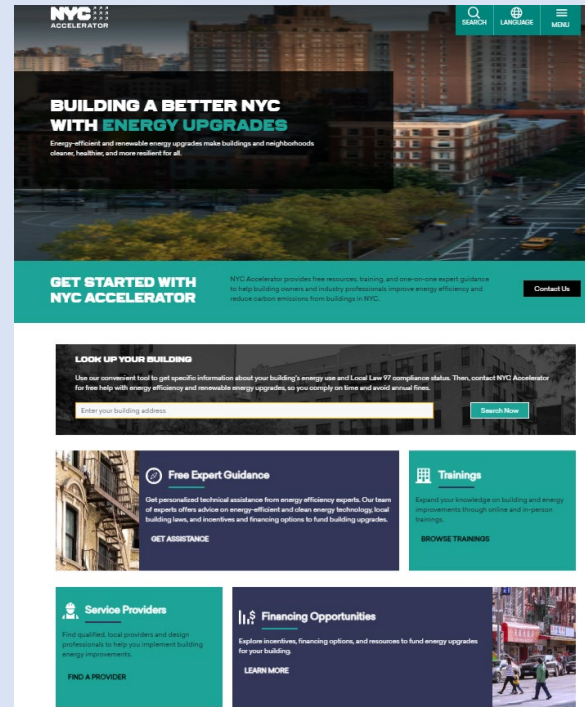
Property Owner Identified Barriers & Solutions

	Potential Barriers	Potential Solutions
	Understanding requirements	Education and community outreach
	Time and Administration	In-person and online Help Desk, trainings
	Cost	No cost for annual filing; 3 rd party benchmarking is less than violation amount
	Equity	Spanish-only training, on-site assistance

Building Energy Benchmarking City Council Study Session

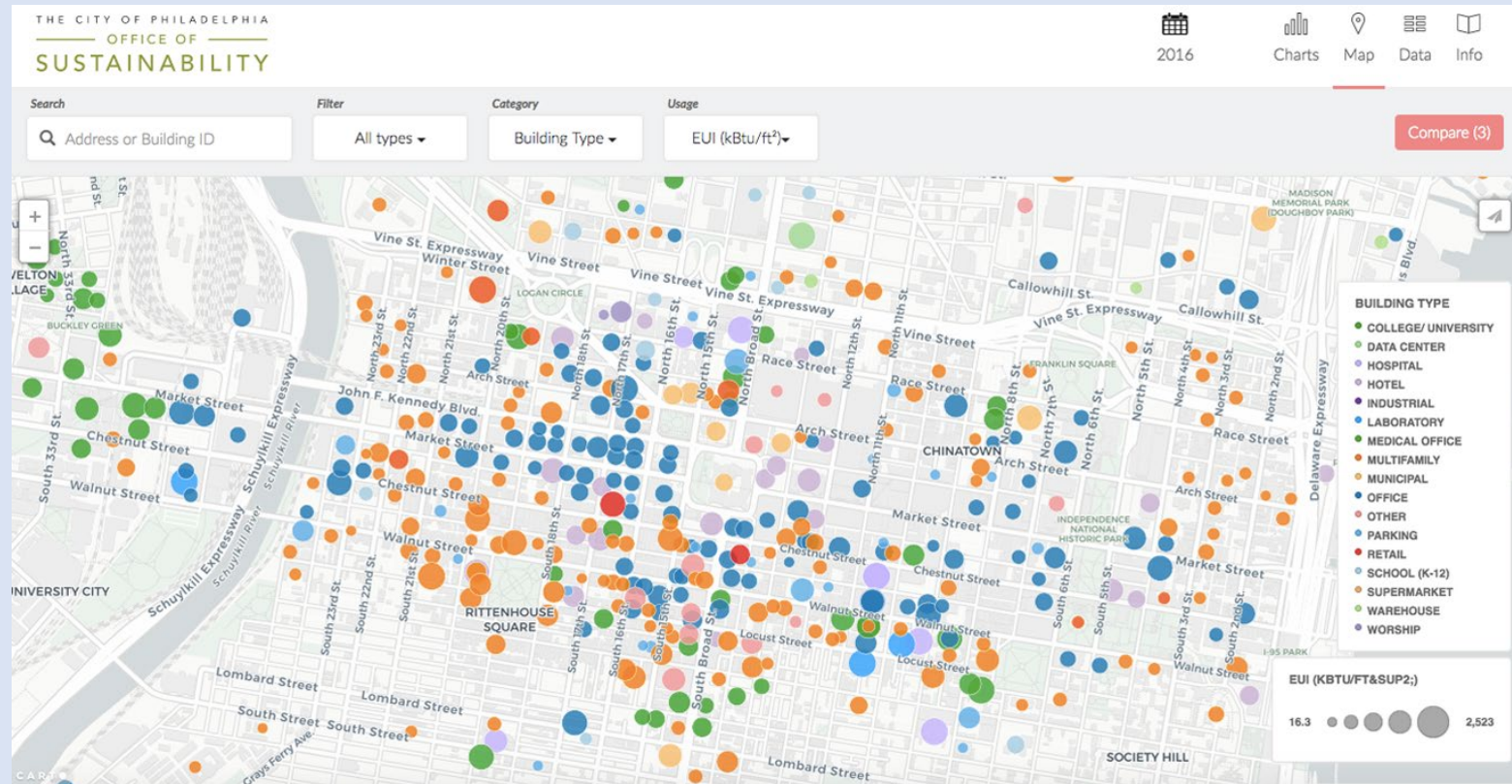
Supporting Resources for Owners

- Online resource hub with information for compliance
- User-friendly owner portal, report card
- Help desk: phone, chat, e-mail
- In-person trainings



Building Energy Benchmarking City Council Study Session

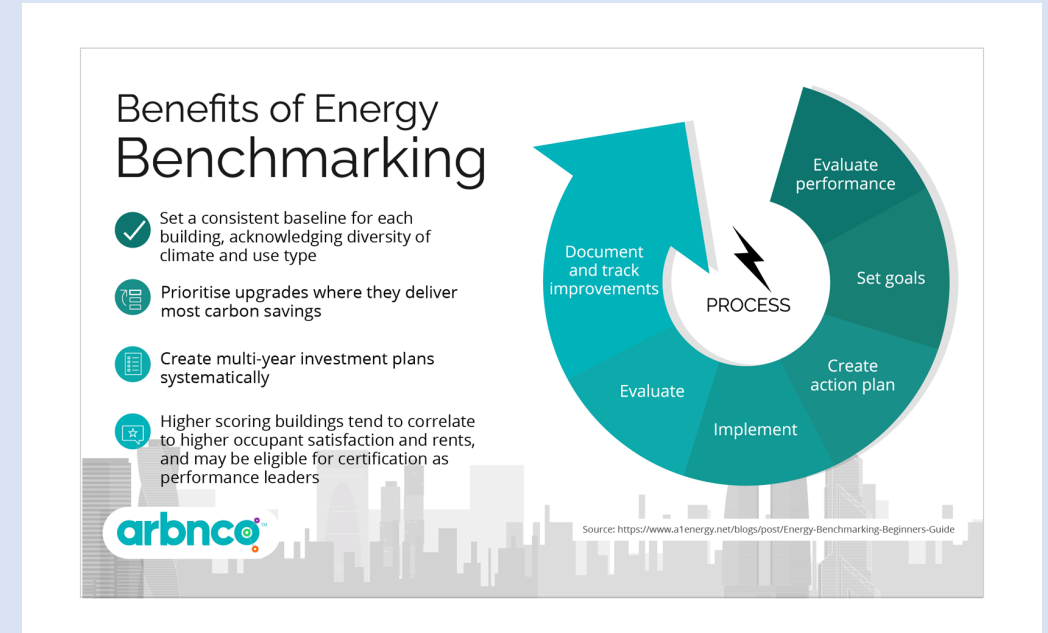
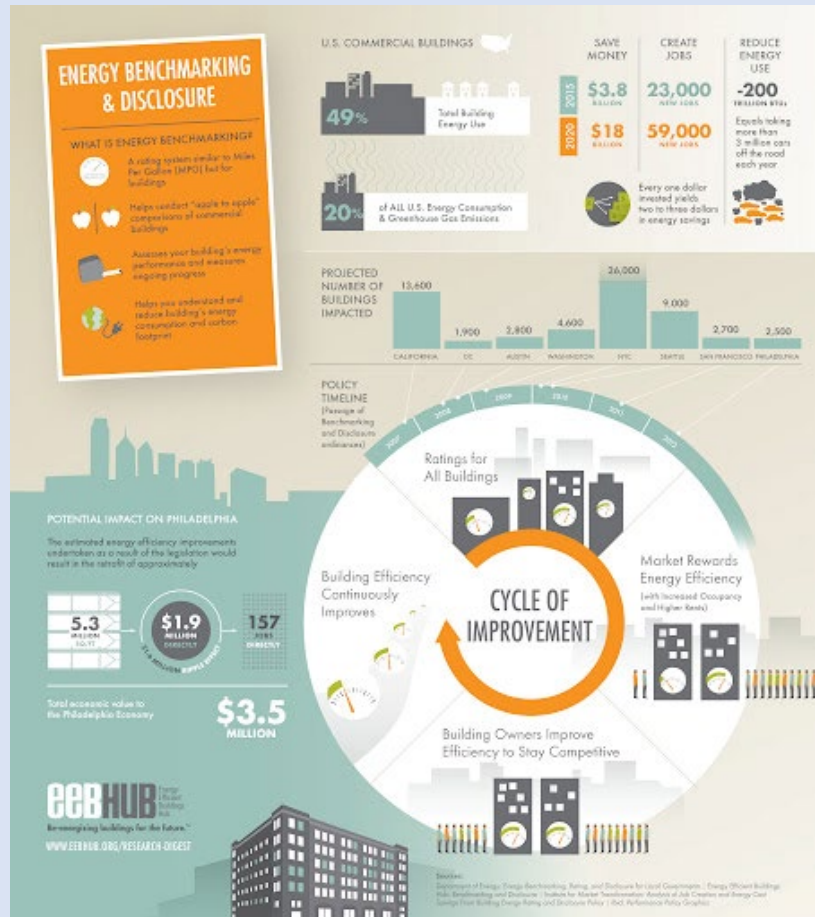
Supporting Resources for Transparency



- Online mapping and visualization

Building Energy Benchmarking City Council Study Session

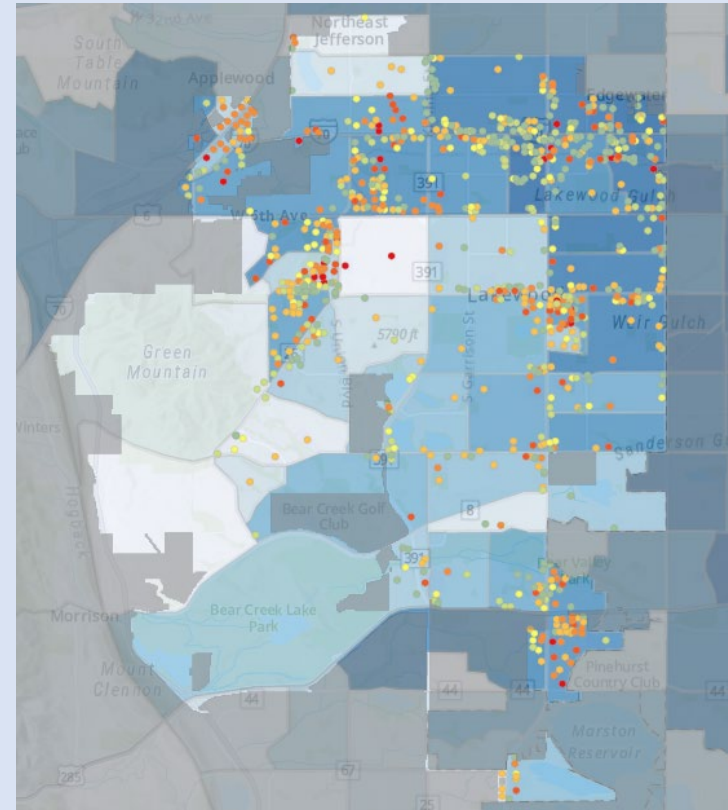
Supporting Communications



Building Energy Benchmarking City Council Study Session

Supporting Resources - Equity

- Translated materials
- In-person trainings (separate English and Spanish events)
- On-site reporting support
- Extended compliance periods with proof of progress



Building Energy Benchmarking City Council Study Session

Key Administrative Needs

- Program Setup
 - Develop Administrative Rules
 - Create covered buildings list with contact information
 - Setup software infrastructure for reporting, online mapping
 - Education, online + in-person training for property owners
 - Community engagement

Building Energy Benchmarking City Council Study Session

Key Administrative Needs (cont.)

- Implementation
 - Property owner communications
 - Help desk
 - Approving waivers and exemptions
 - Address non-compliance
 - Data analysis and quality assurance
 - Continued stakeholder engagement
- Estimated cost: \$300,000-\$350,000/ 1st year

Building Energy Benchmarking City Council Study Session

Next Steps

- Feedback from City Council study session presentation
- Proposed program developed assuming resources from contracted \$5 million DOE grant award: current funding status is unknown
- Current Plan: Track grant funding status, evaluate alternative funding opportunities, and review program scope