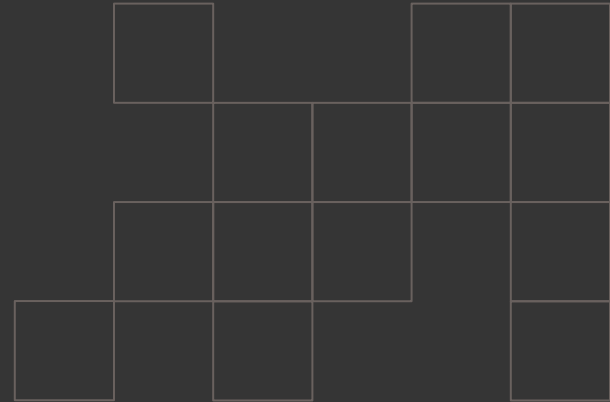


Wren / Madisen / Morgan
ENVM 6100

Chicago Climate Action Plan

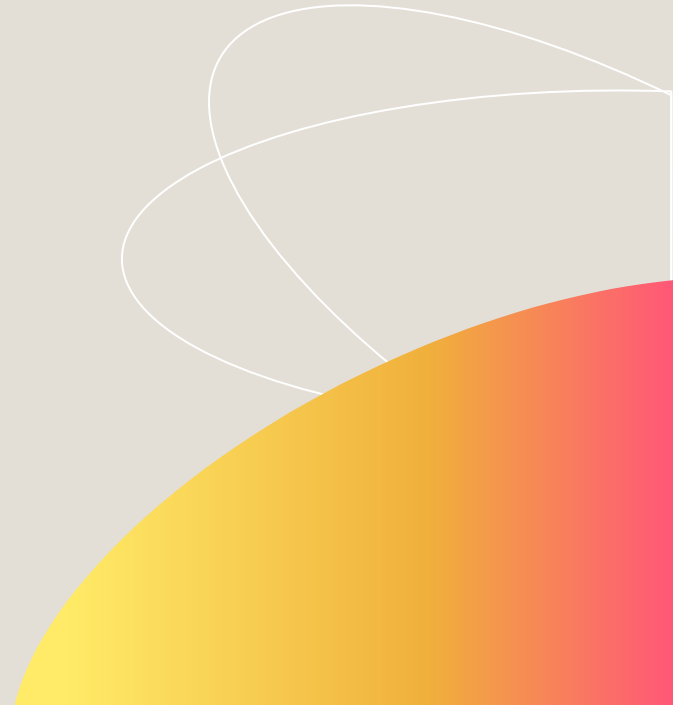
How developed and robust is Chicago's Climate Action Plan?



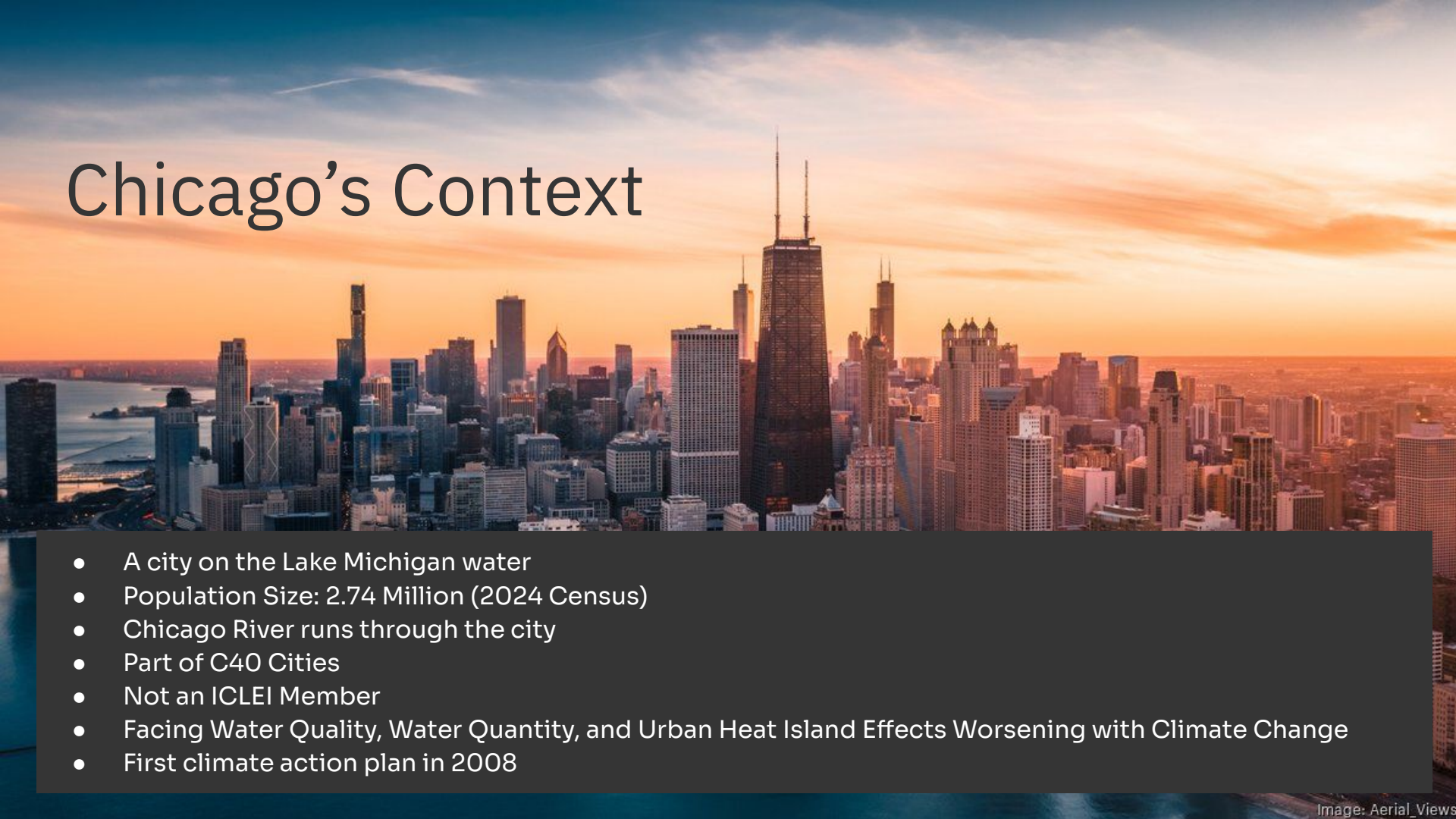
Contents

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Chicago's Context
2.
Quantitative Analysis
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6.
Relevance and Malleability

Chicago's Overall Context



Chicago's Context

An aerial photograph of the Chicago skyline at sunset. The sky is a mix of orange, yellow, and blue, with soft clouds. The city's skyscrapers are silhouetted against the bright horizon. The Chicago River is visible on the left, flowing into Lake Michigan. The Willis Tower is the most prominent building in the center.

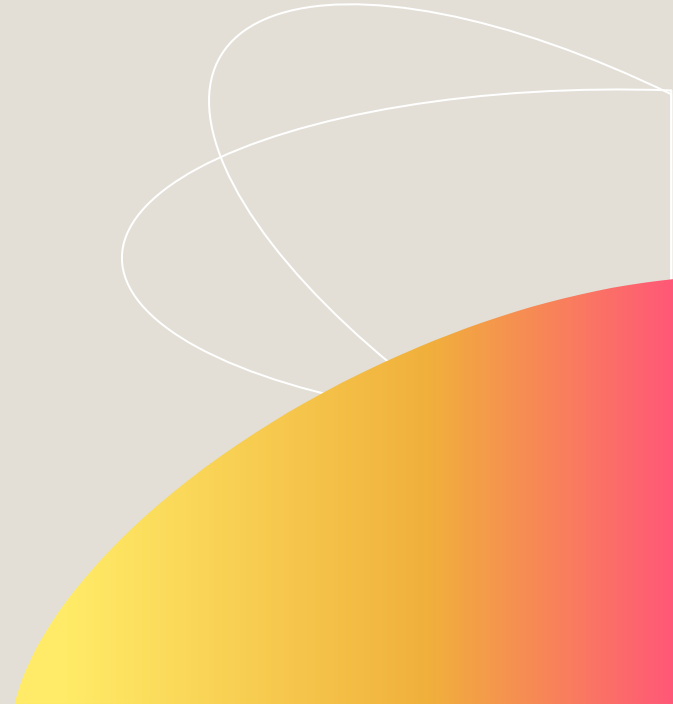
- A city on the Lake Michigan water
- Population Size: 2.74 Million (2024 Census)
- Chicago River runs through the city
- Part of C40 Cities
- Not an ICLEI Member
- Facing Water Quality, Water Quantity, and Urban Heat Island Effects Worsening with Climate Change
- First climate action plan in 2008



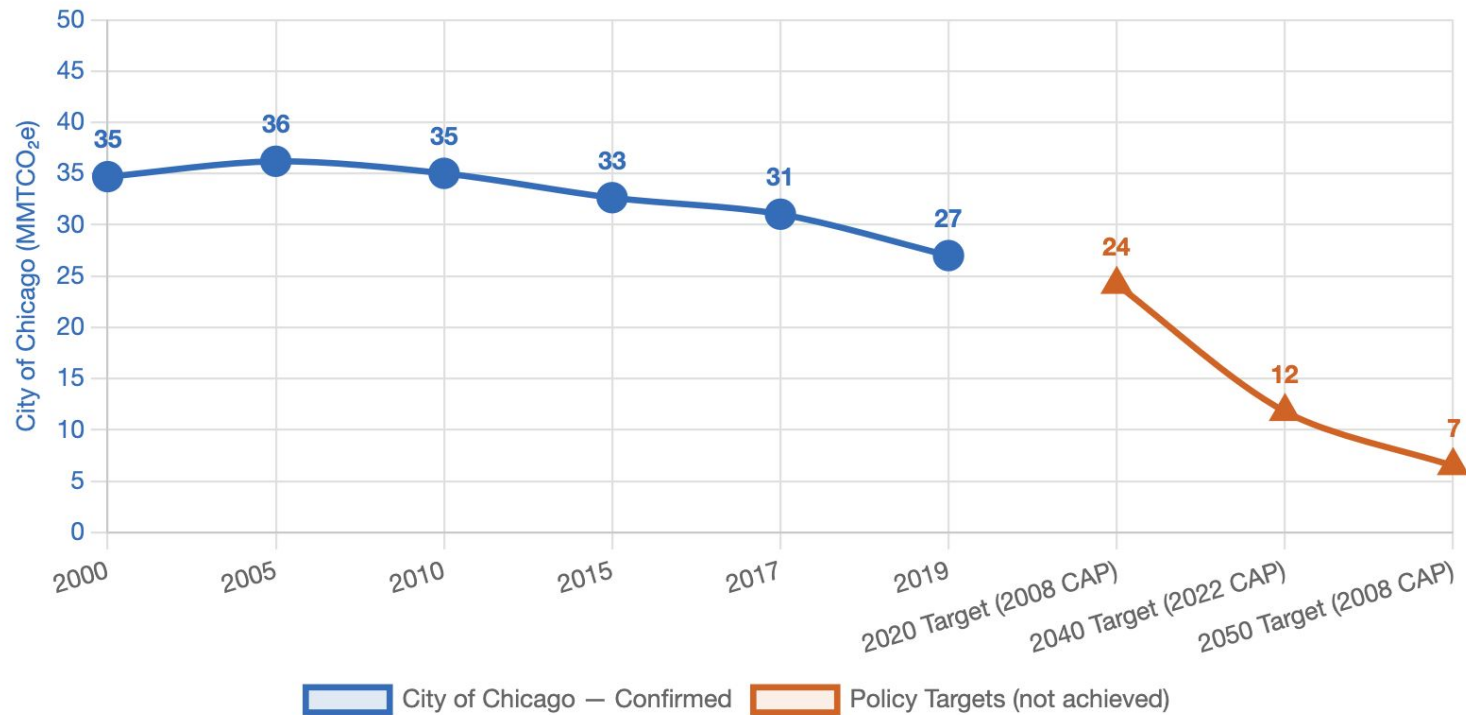
Chicago's Climate Action Strategies

1. **Increase access to utility savings and renewable energy**
 2. **Build circular economies to create jobs and reduce waste**
 3. **Deliver a robust zero-emissions mobility network that connects communities and improves Air Quality**
 4. **Drive Equitable development of Chicago's clean-energy future**
 5. **Strengthen communities and protect health**
- 

The Data : Chicago's GHG Emissions



Quantitative Analysis



Quantitative Analysis: Municipal Operations

From the 2015 CAP

GOAL 12

REDUCE MUNICIPAL FOSSIL FUEL CONSUMPTION BY 10%

Chicago will continue reducing fuel consumption in City operations by purchasing more efficient vehicles and by using its fleet more effectively. By doing so, the City will save money for taxpayers and help reduce citywide transportation emissions.

Key actions:

- » Reduce the number of vehicles in the City's fleet.
- » Increase efficiency of garbage services with street grid-based pick-up routing.
- » Replace 3% of on-road fleet vehicles with green fleet annually.
- » Reduce the energy intensity of CTA rail service by 12% from 2011 levels.

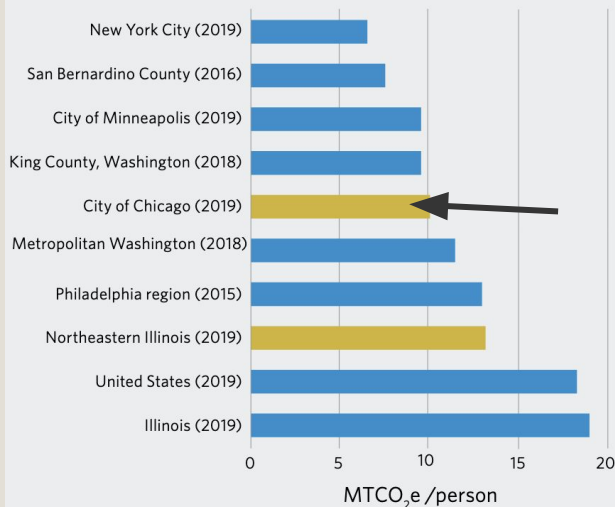
2025: Difficult to find information regarding municipal energy reduction results, though the Sustainable Chicago 2015 plan includes a goal to improve energy efficiency in municipal buildings by 10% (ACEEE Updated in 2024)

The 2022 CAP commits to 100% renewable energy for City operations by 2025 and city-wide by 2035, and to retrofitting 90% of the City's own building portfolio by 2035.

Quantitative Analysis

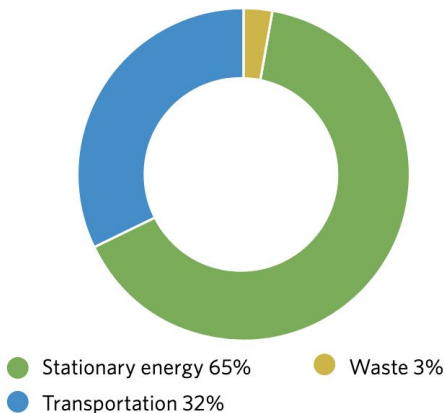
Emissions in context

Per capita emissions for other jurisdictions are provided for the purposes of comparison.

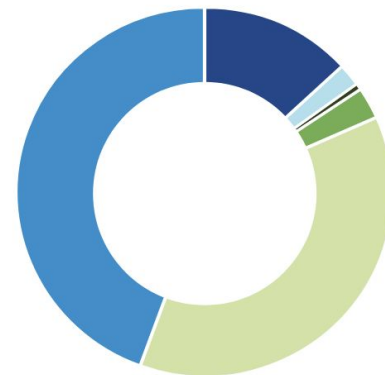


2019 Inventory

2019 regional emissions by sector



2019 stationary energy emissions by subsector



- Residential buildings 37%
- Commercial and industrial buildings and facilities 44%
- Manufacturing industries and construction 13%
- Energy industries 2%
- Wastewater treatment 0.5%
- Fugitive emissions from oil and natural gas 3%

Quantitative Analysis

GHG Emission Findings

Wins:

- Plenty of data to find
- Appears to have thorough inventory methods
- Provides information on how data was collected and analyzed

Woes:

- The CAPs don't present information on how well specific emission goals were achieved year to year
 - Documents and inventories can be difficult to find: no centralized location for all info
 - The later inventories are regional instead of city-specific. How can you compare??
- 

Chicago's Level of Ambition:

Join the Movement



Pledge

to reduce GHG emissions to zero by 2050 and set a interim 2030 target.



Plan

the actions to achieve both the 2030 and 2050 targets within 12 months of joining



Proceed

with high-impact action to achieve the targets during 2021



Publish

and report Race to Zero targets, actions, and progress

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Discussion Question

City vs. Region The 2022 CAP covers Chicago city limits, but emissions don't respect borders. The 2024 Metro PCAP covers 14 counties across 3 states. Is a city-only plan even the right unit of analysis for climate action? How do we decide to create a boundary on our climate action plan area?

Chicago CAP: Qualitative Analysis



Likert Scale: Climate Mitigation & Adaptation

Not
Included
/ Never

Low inclusion /
Rarely

Moderate
inclusion /
Sometimes

High inclusion /
Often

Full inclusion
/ Always



A

GHG Impacts



Develop a fossil-fuel plants transition strategy by 2024

By 2024, the City will develop a peaker plant (power plant used only when there is a high demand for electricity) transition strategy with guidance for an equitable, safe, and inclusive process. Transitioning to the use of alternatives such as battery storage and renewable energy will reduce emissions and alleviate the burden of legacy pollution exposure. In



Likert Scale: Climate Mitigation

Not
Included
/ Never

Low inclusion /
Rarely



A

GHG Impacts



Develop a fossil fuel strategy by 2024

By 2024, the City will develop a fossil fuel strategy (to address demand for electricity) through a public process. Transitioning to renewable energy will reduce emissions and alleviate the burden of legacy pollution exposure. In

2022 CAP embraces an evidence-based approach to these objectives for the development of appropriate adaptation and resiliency plans.

1. Engage and educate the community about climate resiliency and adaptation.
2. Incorporate equity and inclusion into climate adaptation efforts.
3. Collaborate and build capacity for a more resilient community.
4. Enact plans and policies focused on adaptation and resiliency.
5. Adapt operations and investments for future climate conditions.

Likert Scale: Nature-Based Solutions (NbS)

Not
Included
/ Never



Nature Based Solutions

1. Access to nature-based community assets can be integrated into community health and resilience metrics.
2. Plant enough trees or vegetation to match or exceed the environmental and public health benefits lost by the removal of trees during demolition, construction, or other development.
3. Optimize use of permeable materials, reflective surfaces, and tree and vegetative cover in communities experiencing greatest impacts from urban flooding or heat index.

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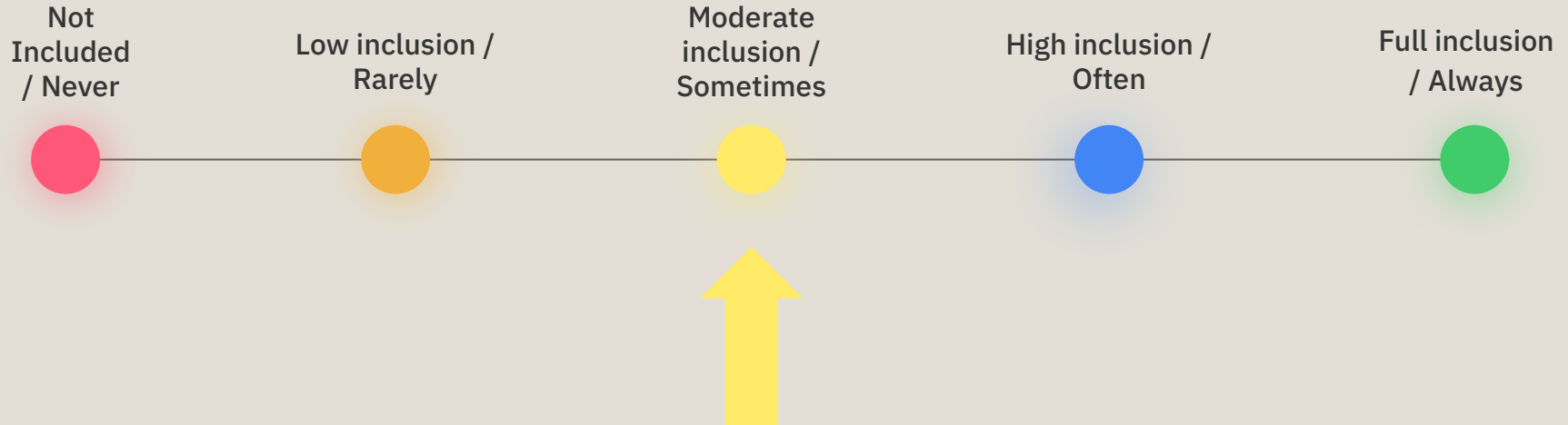
High inclusion /
Often



Full inclusion
/ Always



Likert Scale: Equity

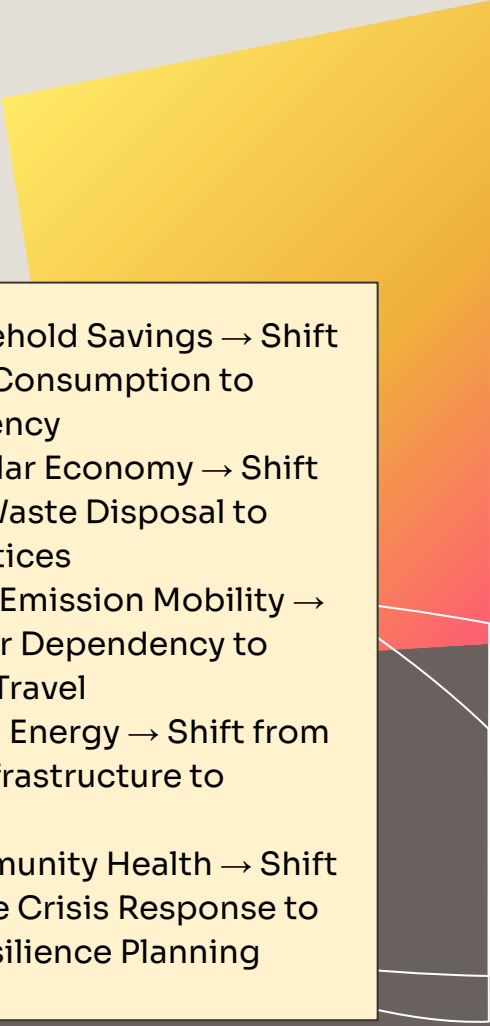


**EXAMINING HOW HISTORIC INEQUITIES
WORSEN CLIMATE IMPACTS**



Delivery Design: Qualitative Analysis

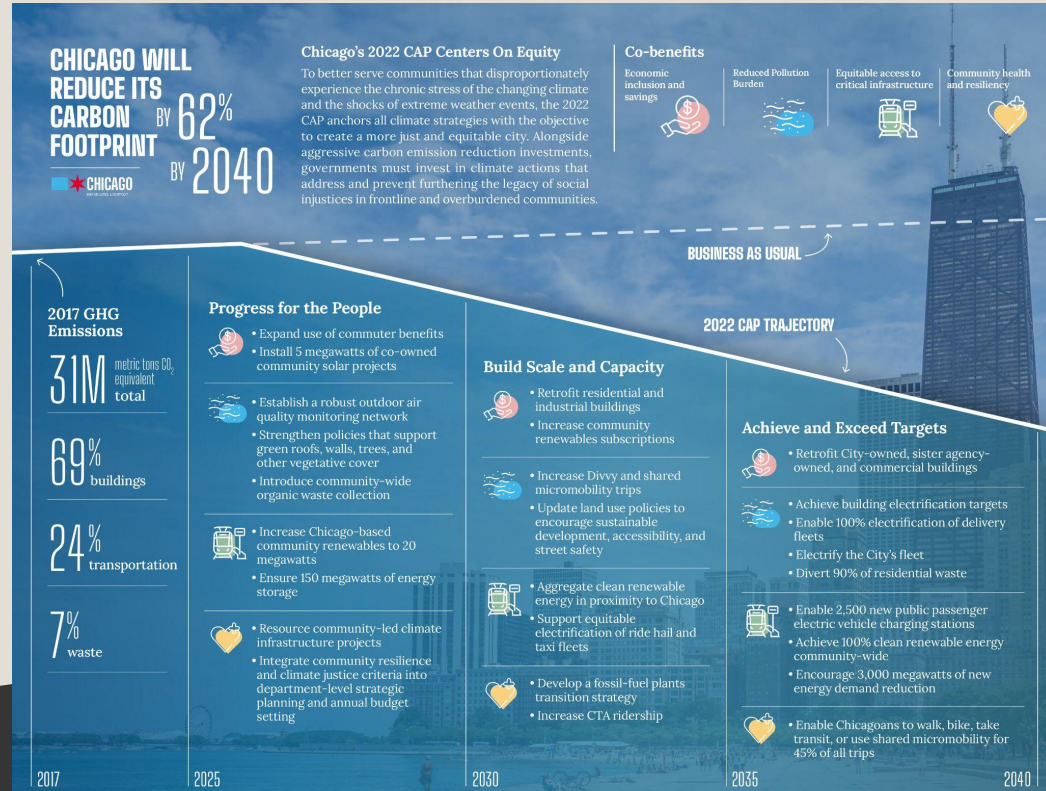
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- 

1. **Pillar 1: Household Savings → Shift from Energy Consumption to Energy Efficiency**
 2. **Pillar 2: Circular Economy → Shift from Linear Waste Disposal to Circular Practices**
 3. **Pillar 3: Zero-Emission Mobility → Shift from Car Dependency to Multi-Modal Travel**
 4. **Pillar 4: Clean Energy → Shift from Fossil Fuel Infrastructure to Renewables**
 5. **Pillar 5: Community Health → Shift from Reactive Crisis Response to Proactive Resilience Planning**
- 

System Requirements, Returns and Interdependence

- Returns: improved building efficiency, electrification, increased local renewable generation & storage, increased rates of composting organic waste, increased waste diversion, increase transportation mode share,
- Delivery discussion focusing on financial limitations and policy supports
- Requirements: phasing of shifts may increase strain on delivery
- Interdependency: lack of explicit analysis between different activity shifts and interventions may prevent
- Interventions?

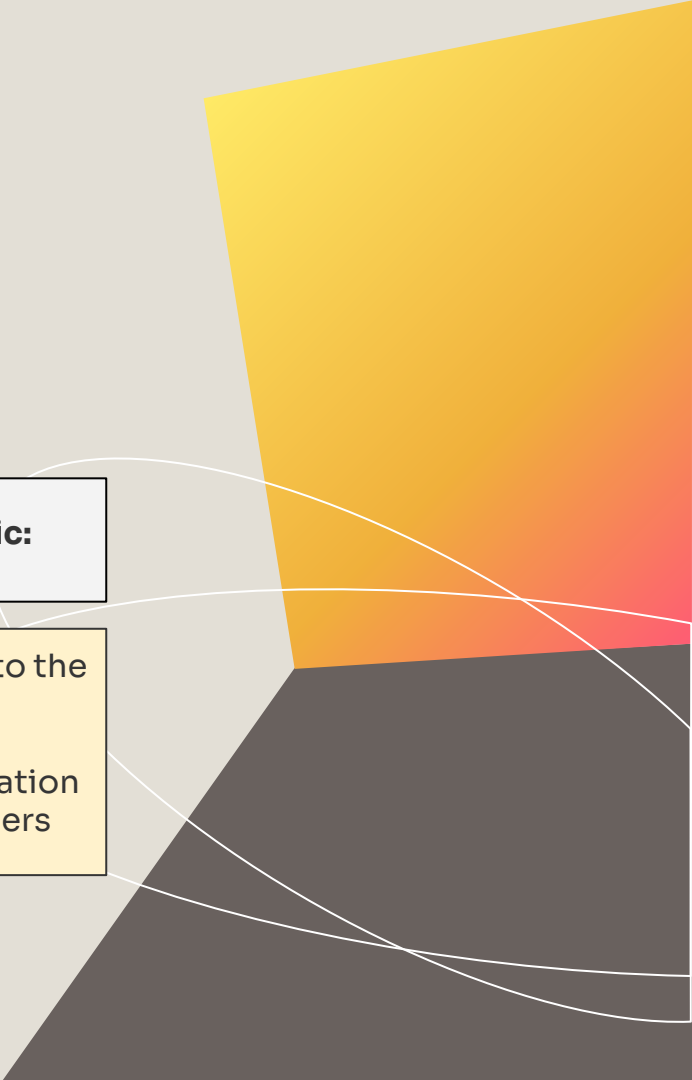
Overall rating: 2





How Adaptable is Chicago's CAP?

The Climate Action Plan is designed to be dynamic:

- Proposed 3 Year Review and Revision Cycle to the Goals stated in the 2022 CAP
 - Formalizing the plan's actions through legislation and policy co-designed with local stakeholders
- 

Is the 2022 CAP still relevant in 2026?

Though there has not been a published 3-year review, there is a working Implementation Plan within the CAP designed to track the Climate Actions over time

IMPLEMENTATION TABLE

Action ID	2022 CAP Action	Metrics	City Partners	Timeframe	Action Status
1.1.A	Retrofit residential buildings with 4 or fewer units: 20% by 2030 and 50% by 2040, prioritizing lower- and middle-income households	Percentage of buildings retrofitted; greenhouse gases avoided	CHA, DOB, DOH, DPD	5+ years	In progress
1.1.B	Retrofit 20% of total 5+ unit residential buildings by 2030	Percentage of buildings retrofitted; greenhouse gases avoided	CHA, DOB, DOH, DPD	5+ years	In progress
1.1.C	Retrofit 20% of total industrial buildings by 2030	Percentage of buildings retrofitted; greenhouse gases avoided	DOB, DPD, BACP	5+ years	In progress
1.1.D	Retrofit 90% of total City-owned and Sister Agency-owned buildings by 2035	Percentage of buildings retrofitted; greenhouse gases avoided	AIS, CCC, CDA, CDOT, CHA, CPD, CPS, CTA, DOB, DWM, PBC	5+ years	In progress
1.1.E	Retrofit 20% of total commercial buildings by 2035	Percentage of buildings retrofitted; greenhouse gases avoided	DOB, DPD	5+ years	In progress
1.2.A	Install 5 megawatts of co-owned community solar projects by 2025	Megawatts installed	AIS, CCC, CHA, CPS, DOB, DPD	3 to 5 years	In progress
1.2.B	Increase Chicago-based community renewables to 20 megawatts by 2025	Megawatts installed	BACP, DFSS, DPD	3 to 5 years	In progress

Thank you! Any Questions?

