



Chicago Metropolitan Regional Climate Action



MMC Environment Committee
Village of Montgomery

January 21, 2020

@MayorsCaucus

@IUC_NA

@ONTO2050



Welcome

Matt Brolley,
Mayor, Village of Montgomery



Kevin Burns, Mayor, City of Geneva

Chairman, Metropolitan Mayors Caucus Environment
Committee and Energy Sub Committee



Chicago
Climate
Charter



Ready for Climate Planning

Jared Patton, AICP

Chicago Metropolitan Agency for
Planning (CMAP)

Edith Makra

Metropolitan Mayors Caucus





Municipal Sustainability & the Greenest Region Compact (GRC)

Global Covenant of Mayors for Climate & Energy

Regional & Metro Scale Climate Leaders Project

Climate Action Plan Development

- Regional Greenhouse Gas Inventory
- Climate Risks & Vulnerability

Local to Regional

GRC Framework

Small Group Exercise

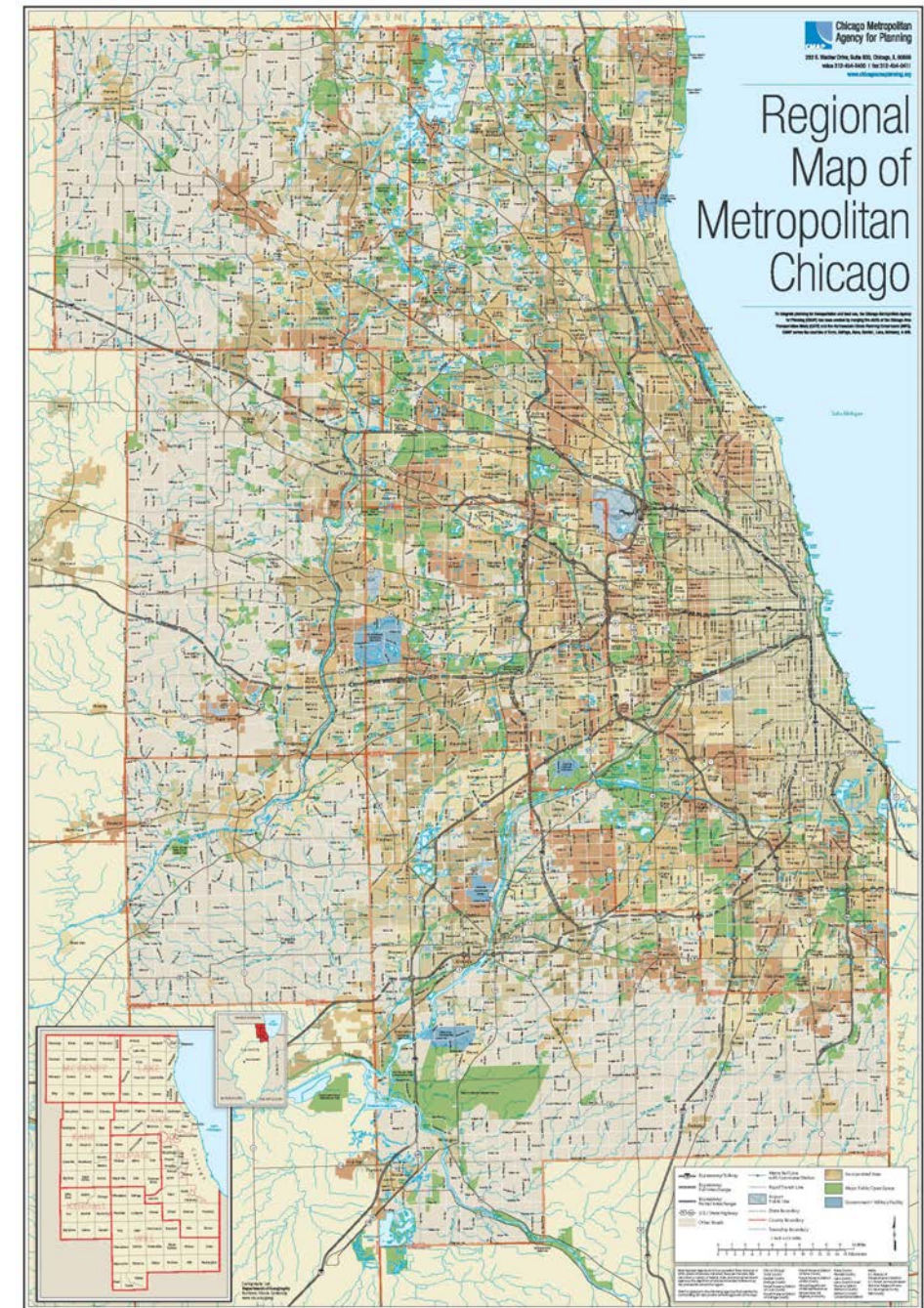
Reconvene & Close

Regional Municipal Sustainability

- 284 Diverse communities
- Fragmented service delivery
- Sustainability resources are limited
- Collaboration is key



CMAP



Greenest Region Compact Goal

To align environmental issues, resources, and actions at the local, regional and national levels to guide municipalities to achieve greater environmental sustainability.

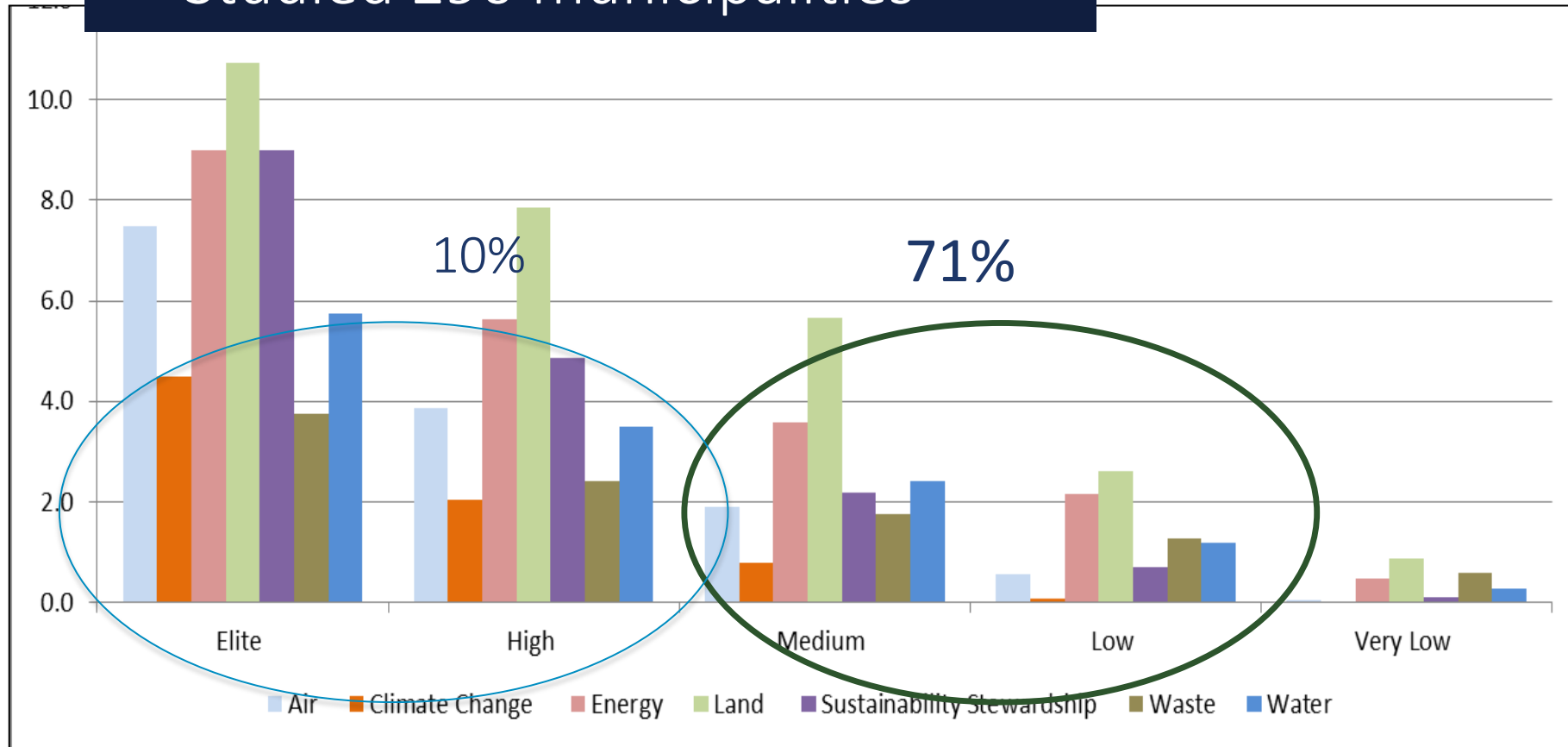


COLLABORATING FOR SUSTAINABLE COMMUNITIES

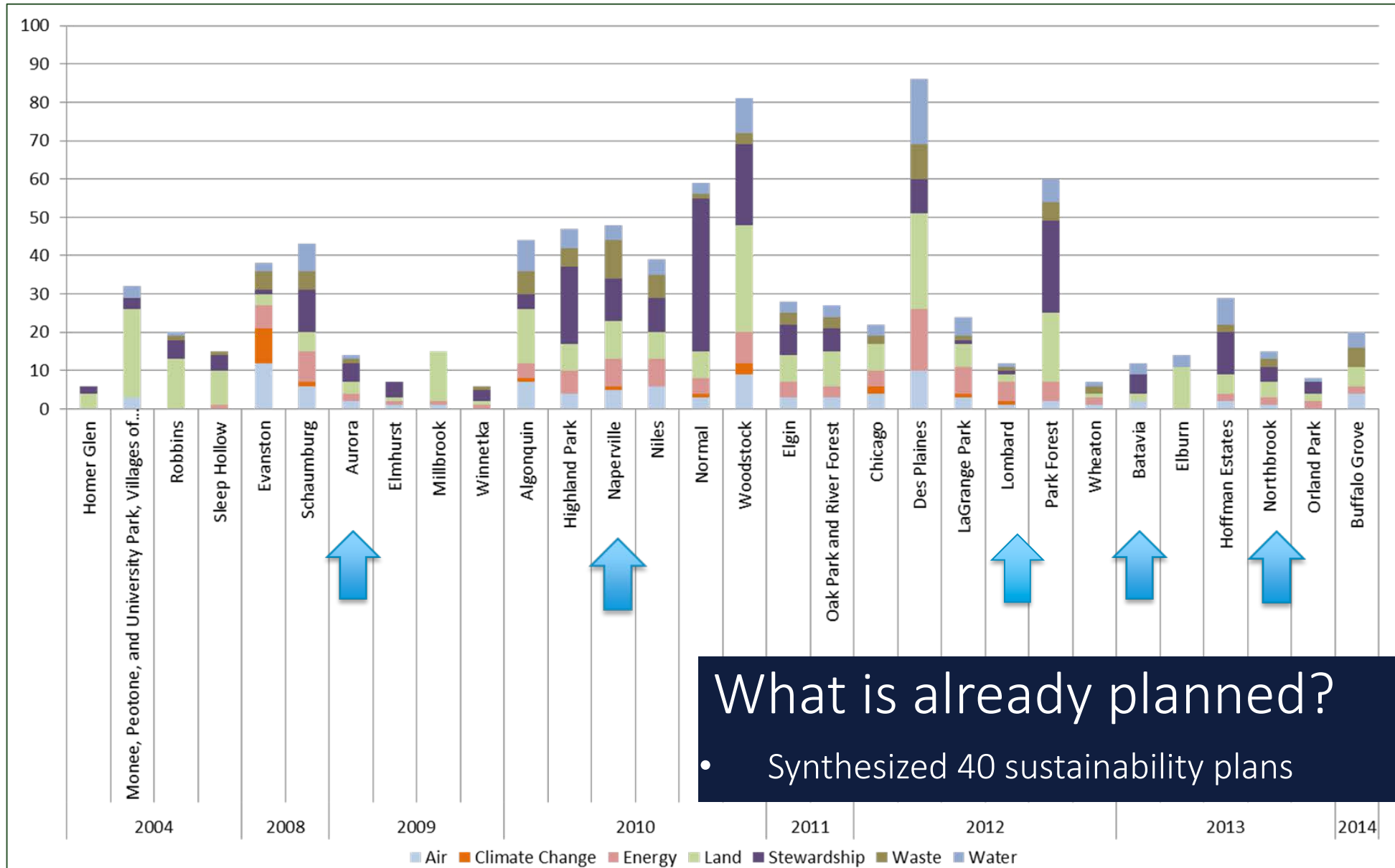
Building the GRC

What is already underway?

- Studied 290 municipalities



Building the GRC



What is already planned?

- Synthesized 40 sustainability plans



The Greenest Region Compact

Consensus Sustainability Goals in 10 Categories



Climate



Economic Development



Energy



Land



Leadership



Mobility



Municipal Operations



Sustainable Communities



Water



Waste

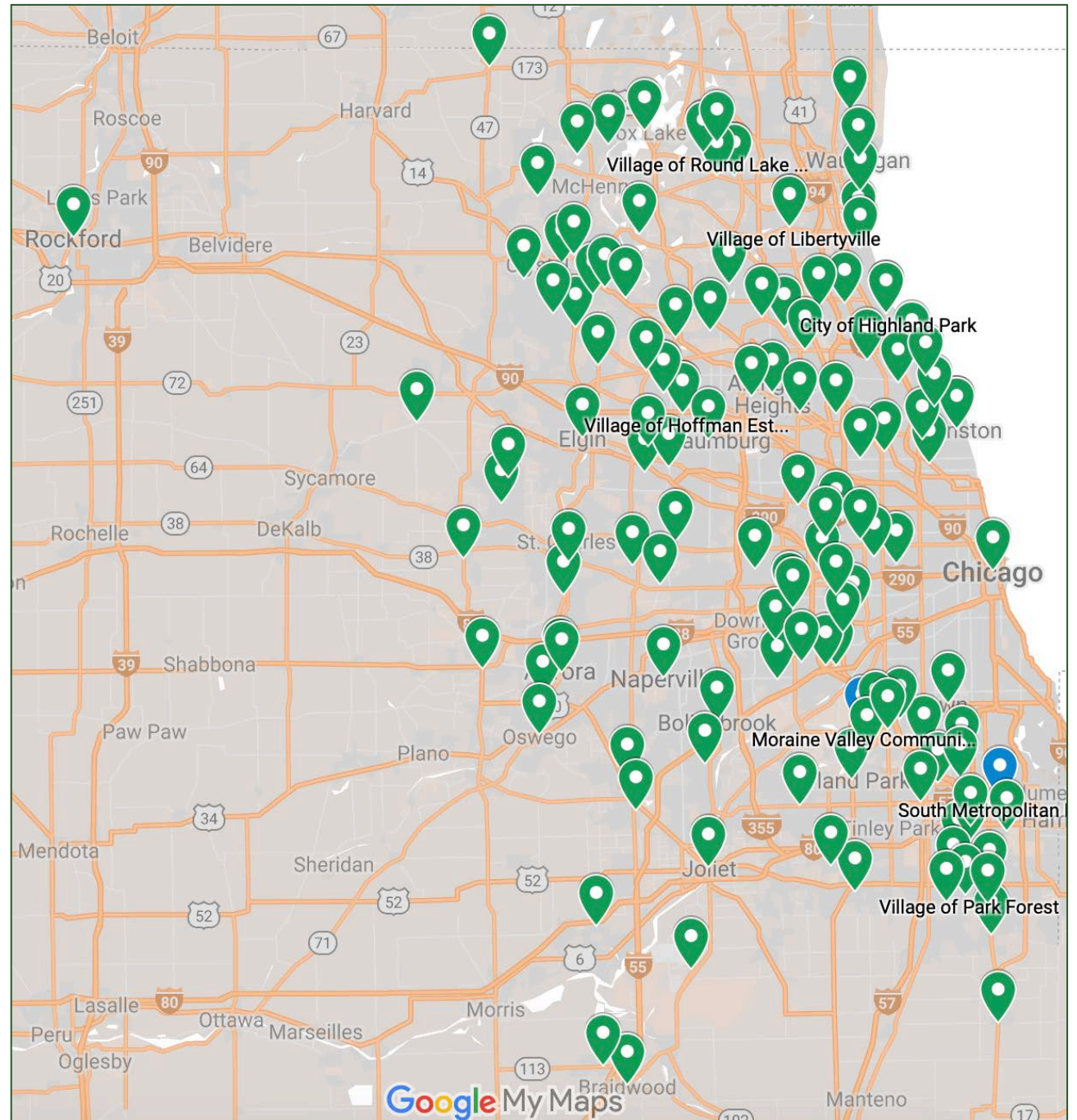
GRC Communities

126 municipalities

3 counties

10 COGS (council of gov'm't)

Have formally adopted the Greenest Region Compact



Addressing GRC Goals together



Advance renewable energy
35 local gov's streamlined
solar codes & policies

#1

653%
growth in
Montgomery



*Dedicate staff to
sustainability initiatives*
GRCorps provides talent



Evolving Focus for MMC Munis

Environment

Clean Air Counts (2006)
GRC (2007)

Sustainability

GRC2 (2016)

Climate

now

Municipal actions need to accelerate and focus



Goal - Use Energy for Public Facilities Efficiently

- Strategies Already Underway

1	Access to Parks/Open Space
	Solid Waste Agency
2	membership/Curbside Recycling
3	Energy Efficiency retrofits public bldgs
4	Urban Forest stewardship
5	Water Metering

- Already Planned

1	Land Preservation
2	Building Retrofits
	Stormwater Management & Green Infrastructure
3	
4	Sust Com Outreach & Engagement
5	Smart Growth & TOD



Stationary Energy

283 local governments
76.5 million lbs avoided CO2

Spark for Regional Climate Plan from the European Union



International Urban Cooperation Program

- enables cities and regions to **learn and share** solutions to common urban challenges.
- Part of a long-term strategy by the European Union to foster **sustainable urban development** in cooperation with both the public and private sectors



2. Sub-national action under the Global Covenant of Mayors initiative

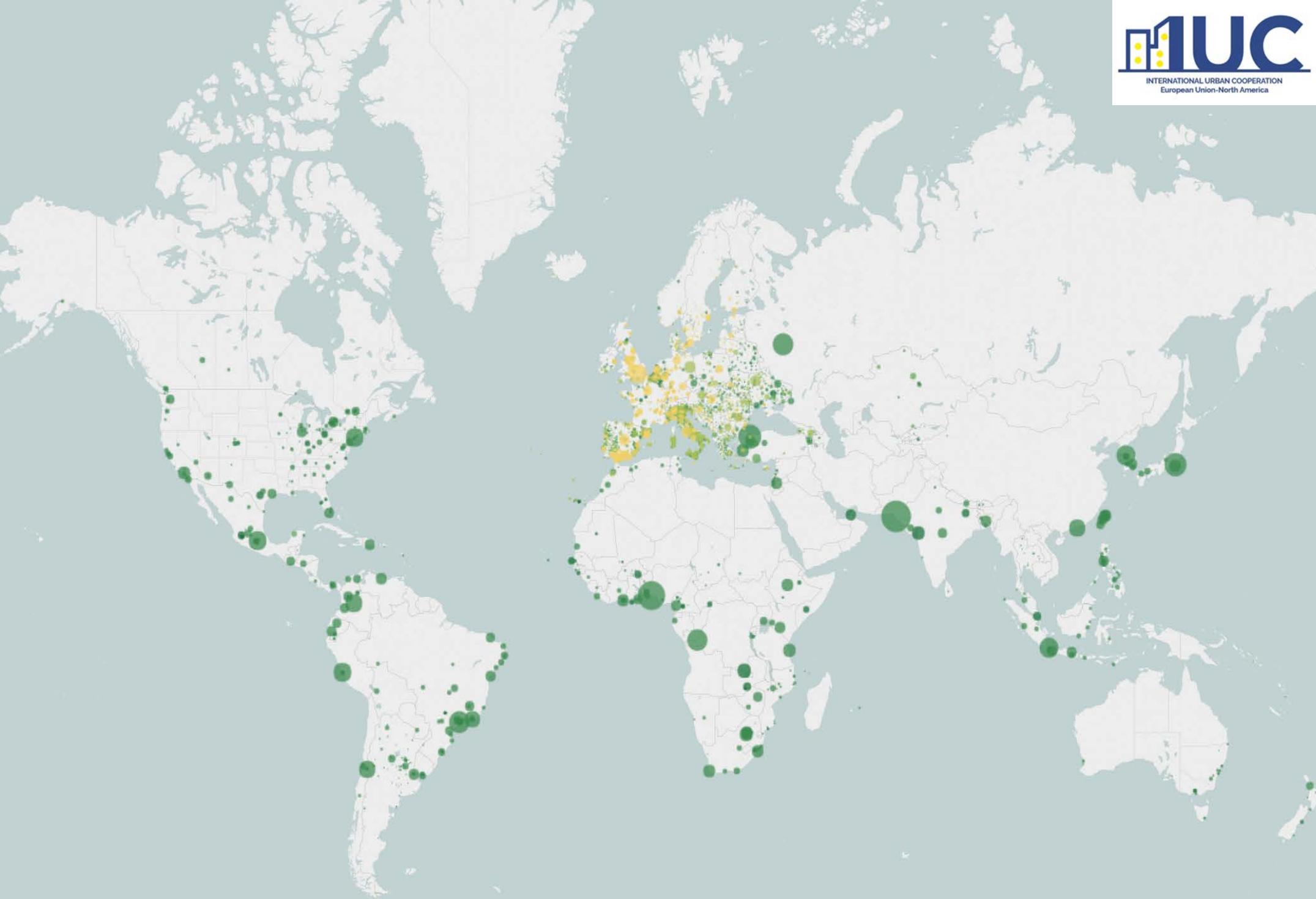


GCoM USA



GLOBAL COVENANT
of MAYORS for
CLIMATE & ENERGY

“A first-of-its-kind and largest global alliance of cities leading the fight against climate change, with support with support from city networks and other partners”



9,200+ CITIES

130+ COUNTRIES

800+ MILLION
PEOPLE

100+ GLOBAL
PARTNERS (city
networks, private
partners, research
institutions)

10+% OF THE
GLOBAL
POPULATION

GCoM Commitment

- ✓ GHG emission inventory;
- ✓ An assessment of climate risks and vulnerabilities;
- ✓ Ambitious, measurable and time-bound target(s);
- ✓ Ambitious climate change adaptation vision and goals;
- ✓ A formally adopted plan addressing climate change mitigation, climate resilience and adaptation, and access to sustainable energy.



Global Covenant of Mayors for Climate & Energy Commitment of

[Name of City or Local Government (please include type of jurisdiction (e.g. city/town/village, etc.))]
[Name of country/region]
[Local Government Logo if applicable]

I, [Name], [Mayor and /or title of equivalent mandated representative] of [name of city or jurisdiction] commit to the Global Covenant of Mayors for Climate & Energy (GCoM), joining thousands of other cities and local governments around the world currently engaged in climate leadership.

GCoM envisions a world where committed mayors and local governments – in alliance with partners – accelerate ambitious, measurable climate and energy initiatives that lead to an inclusive, just, low-emission and climate resilient future, helping to meet and exceed the Paris Agreement objectives.

Whatever the size or location, the mayors and local leaders committed to GCoM stand ready to take concrete measures with long-term impact to tackle the interconnected challenges of climate change mitigation and adaptation, as well as access to sustainable energy.

To implement this vision, we pledge to implement policies and undertake measures to (i) reduce / avoid¹ greenhouse gas (GHG) emissions, (ii) prepare for the impacts of climate change, (iii) increase access to sustainable energy, and (iv) track progress toward these objectives.

Specifically, within three years of this commitment², we pledge to develop, adopt³, use and regularly report on the following:

- A community-scale GHG emission inventory, following the recommended guidance;
- An assessment of climate risks and vulnerabilities;
- Ambitious, measurable and time-bound target(s) to reduce/avoid GHG emissions;
- Ambitious climate change adaptation vision and goals, based on quantified scientific evidence when possible, to increase local resilience to climate change;
- An ambitious and just goal to improve access to secure, sustainable and affordable energy; and
- A formally adopted plan(s) addressing climate change mitigation / low emission development, climate resilience and adaptation, and access to sustainable energy.

The targets and action plans for mitigation / low emission development must be quantified and consistent with or exceed relevant national unconditional⁴ commitments defined through the UNFCCC (Intended) Nationally Determined Contribution (NDC). The targets and action plans should be in line with National Adaptation Plans, where these exist; and should be consistent with the principles around energy access and urban sustainability embodied in the Sustainable Development Goals (SDGs).

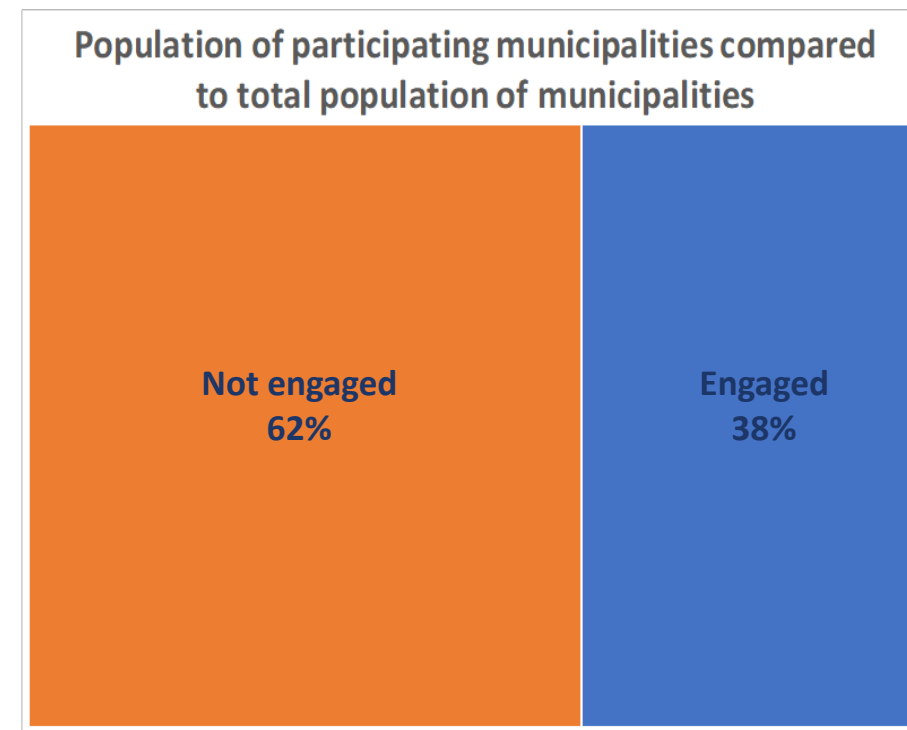
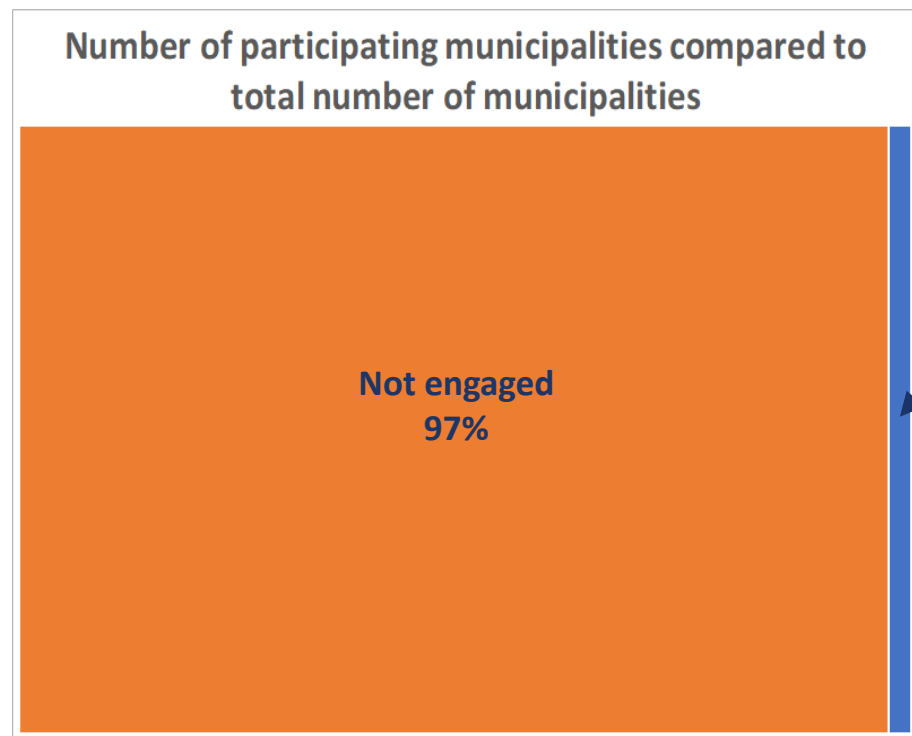


GCoM Requires Accountability through the Common Reporting Framework

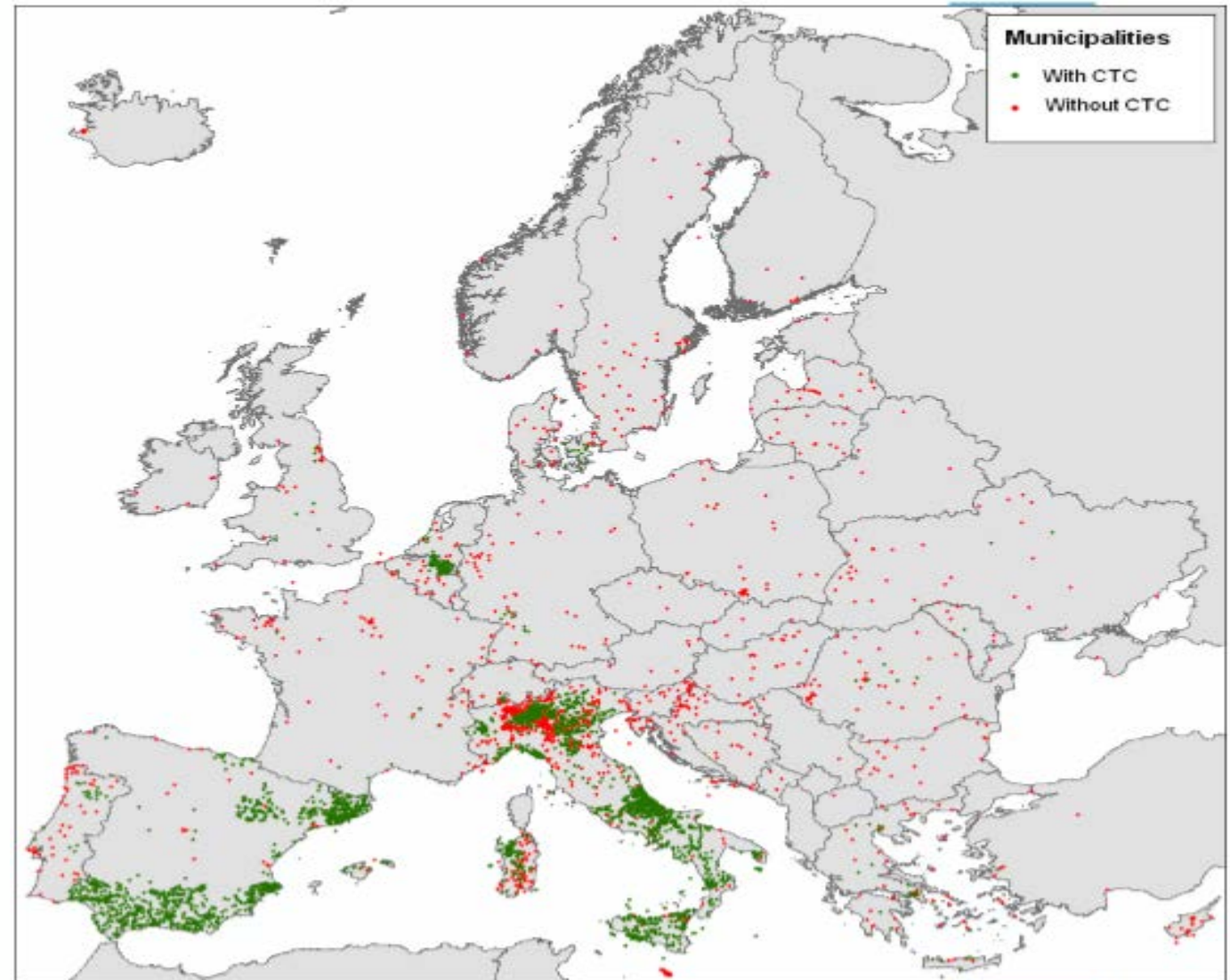
The **Common Reporting Framework (CRF)** aligns city and regional climate action with global best practices.

It provides a standardized platform for reporting and tracking progress.

‘Metro-scale Climate Leaders’



Climate action happens better
with regional collaboration

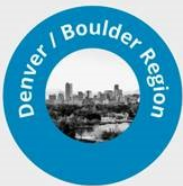


Source: European Commission Joint Research Centre

Metro-scale Climate Leaders Selected



**GCoM USA Regional and
Metro-scale Climate Leaders**



- Technical support
- Knowledge exchange between US regions and other regions
- Promotion of regional case studies through GCoM



*To comply with GCoM
commitment:*

Already completed:

- GHG Inventory



Biz as Usual (BAU) Projections



GHG Reduction Targets



Emissions Scenarios



GRC to inform action development

To be completed by October 2020:

- Climate Risk and Vulnerability Assessment
- Climate Action Plan

Ongoing

- Utilize Common Reporting Framework



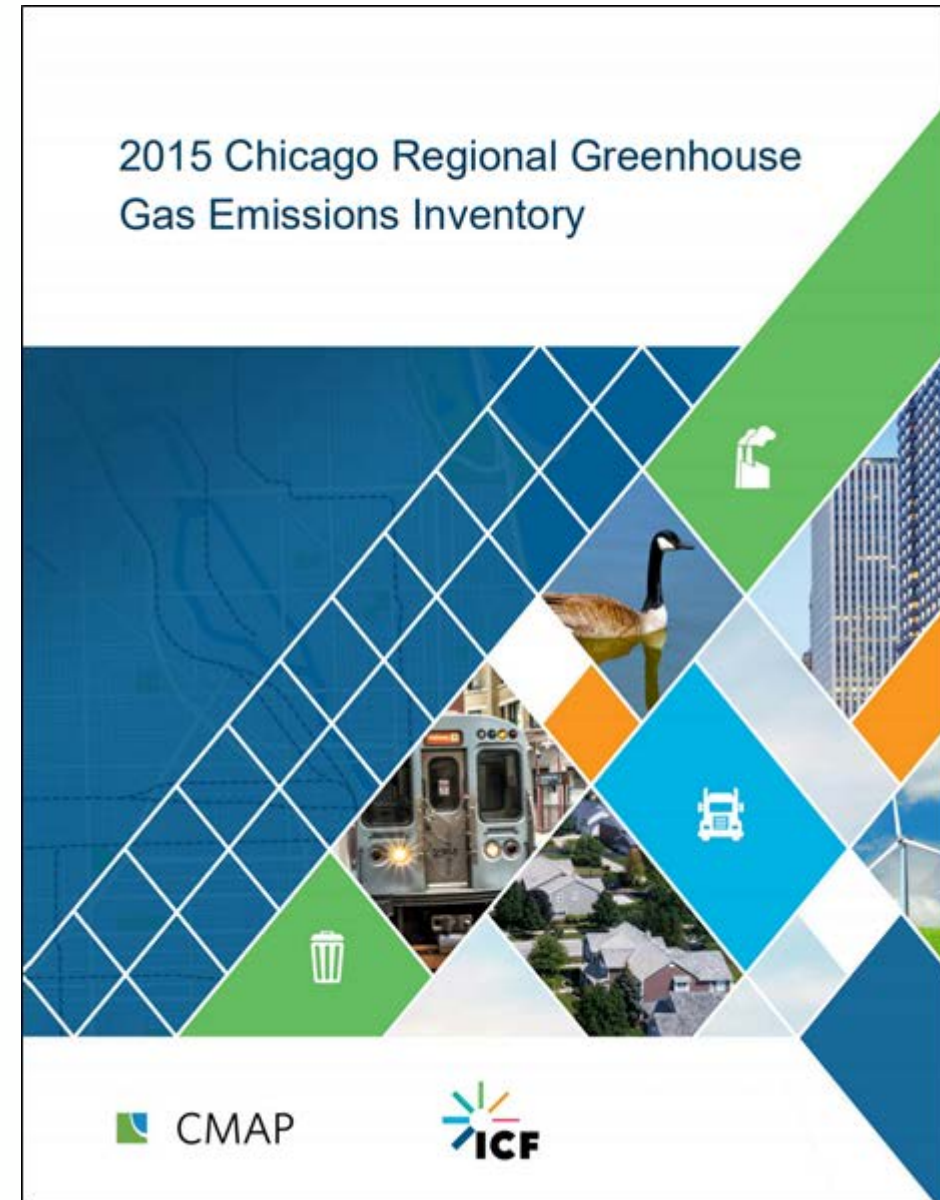
2015 Chicago Region GHG Emissions Inventory

Jared Patton

CMAP

Background

- *New inventory for 2015*
- *Update 2010 inventory*
- *Basic projections*
- *Inform ON TO 2050*



What is not included:

- *Interregional aviation*
- *Land use & agriculture*
- *Embedded emissions*

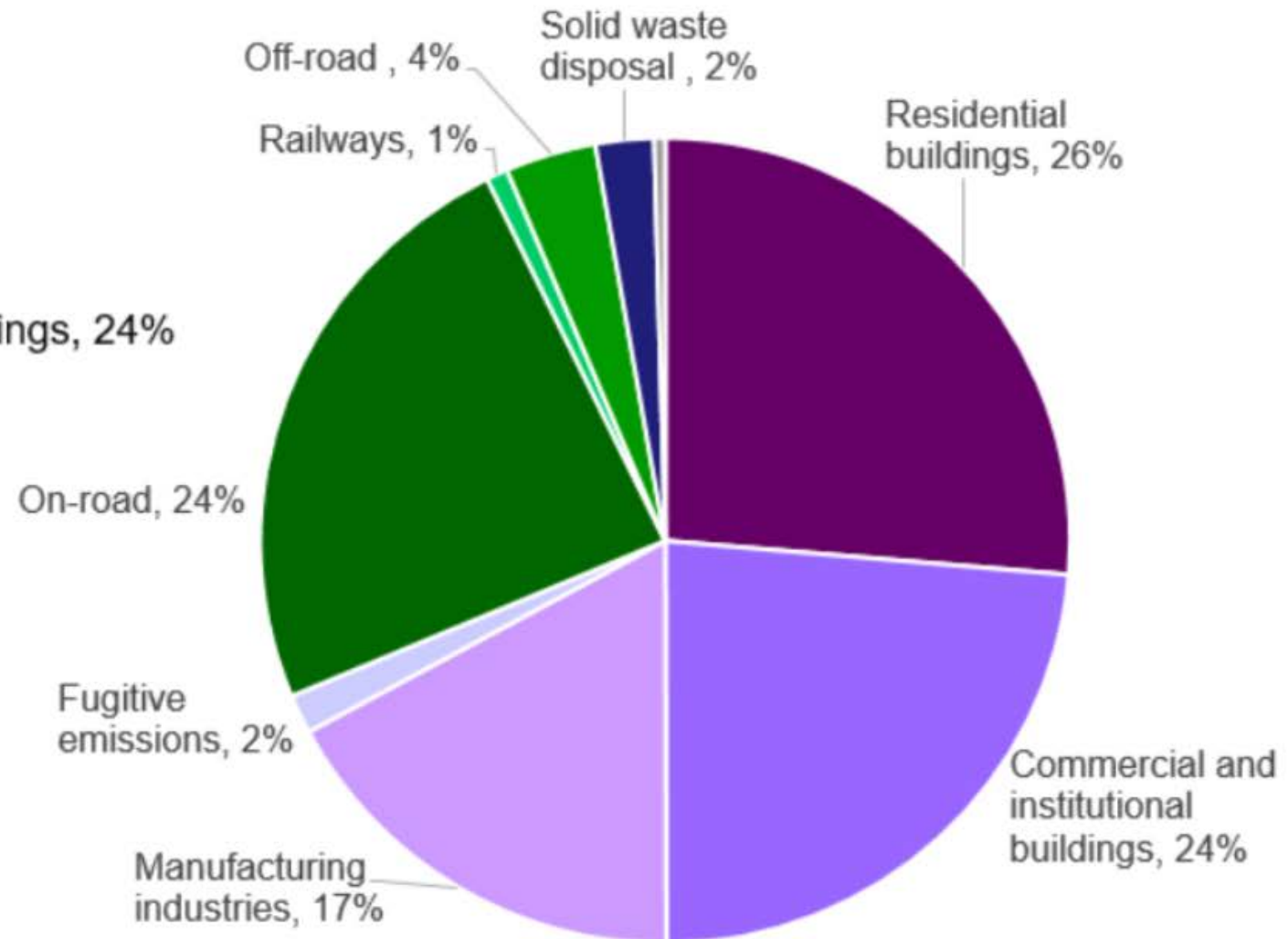
Additional notes:

*Not a count of actual emissions or
renewable energy capacity*



Greenhouse gas emissions by subsector for Chicago region, 2015

- Residential buildings, 26%
- Commercial and institutional buildings, 24%
- Manufacturing industries, 17%
- Fugitive emissions, 2%
- On-road, 24%
- Railways, 1%
- Off-road, 4%
- Disposal of solid waste, 2%
- Other, 0.43%*





TOTAL EMISSIONS

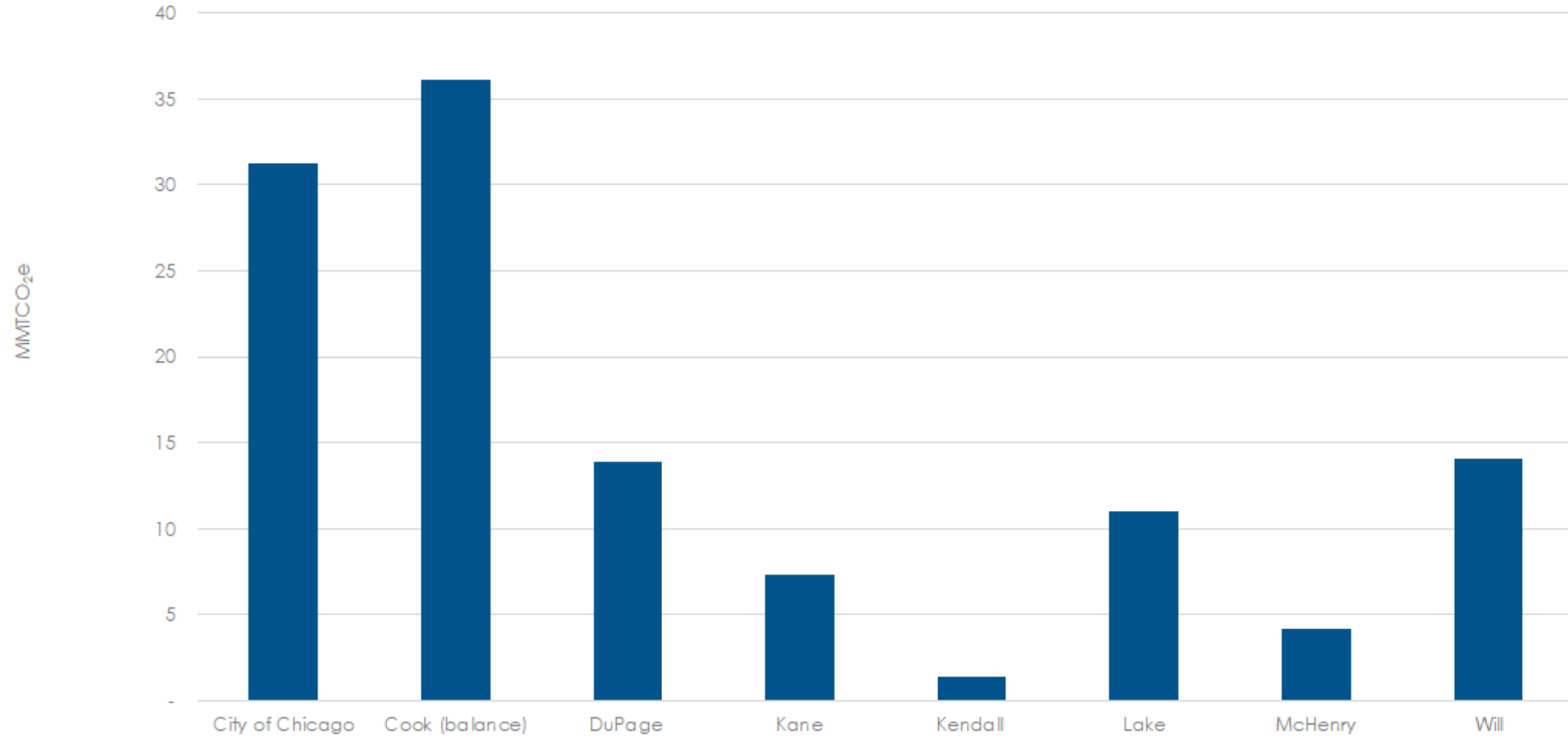
119
MMTCO₂e

PER CAPITA EMISSIONS

13.97
MTCO₂e/PERSON

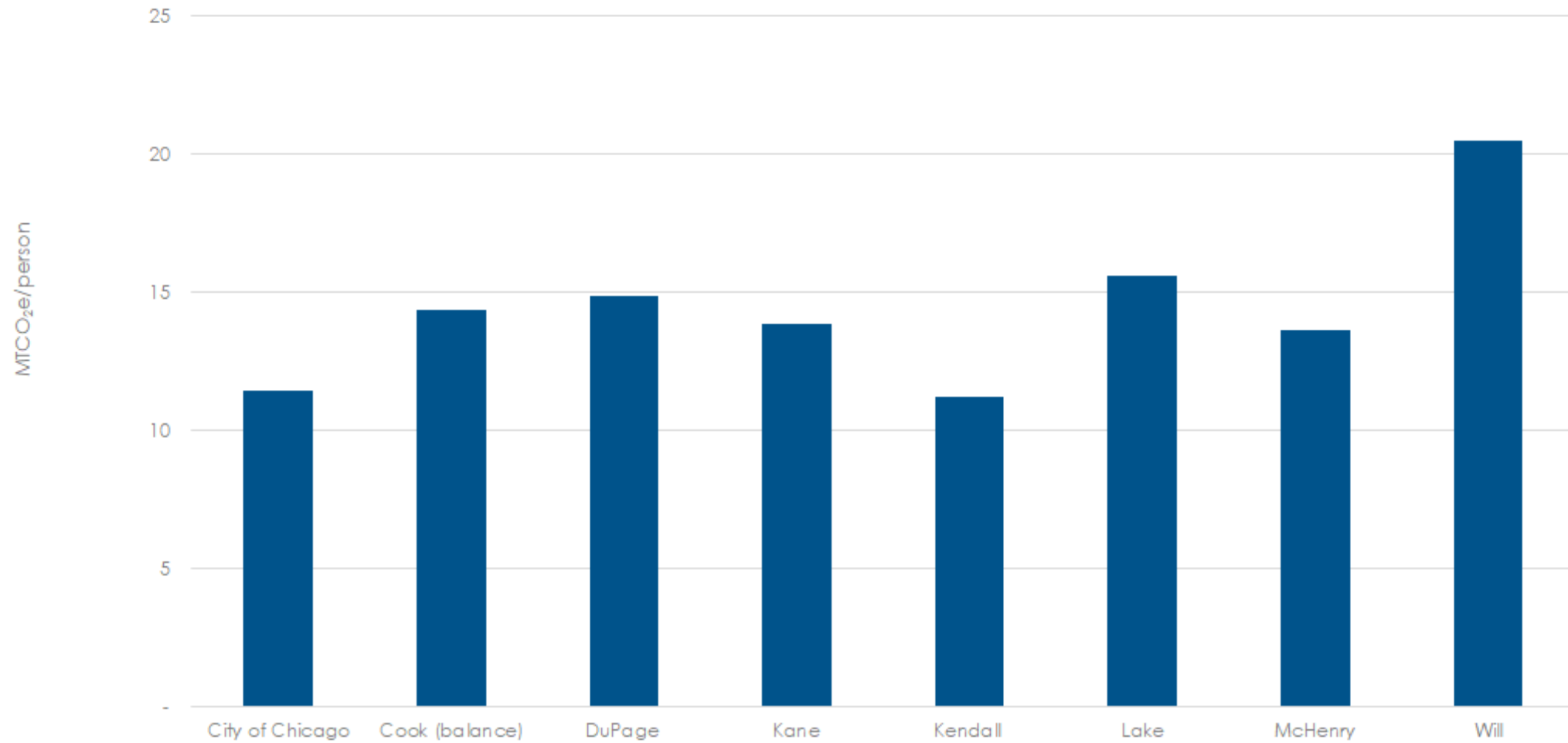


Total emissions (2015)





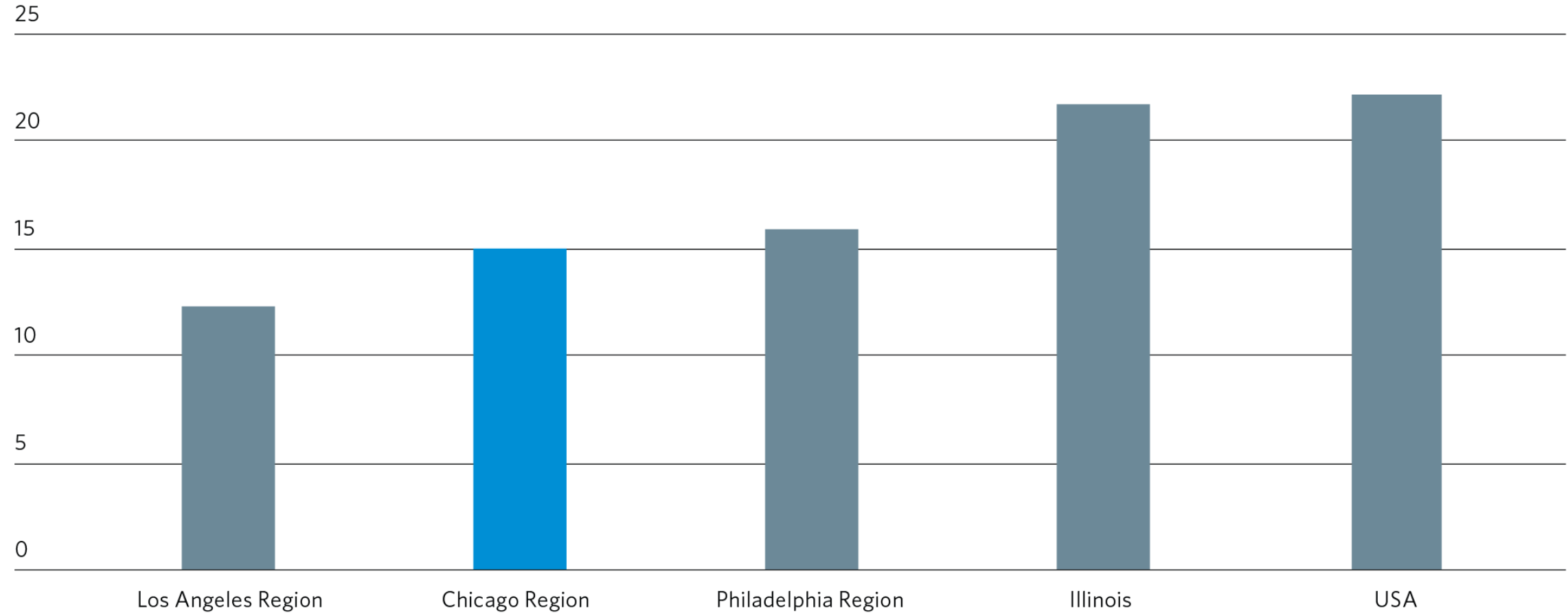
Per capita emissions (2015)





Per capita GHG emissions, CMAP region and select other geographies

Source: Chicago Metropolitan Agency for Planning 2012; Delaware Valley Regional Planning Commission, 2007; Southern California Association of Governments, 2012; World Resources institution, 2007; U.S. Environmental Protection Agency, 2010.

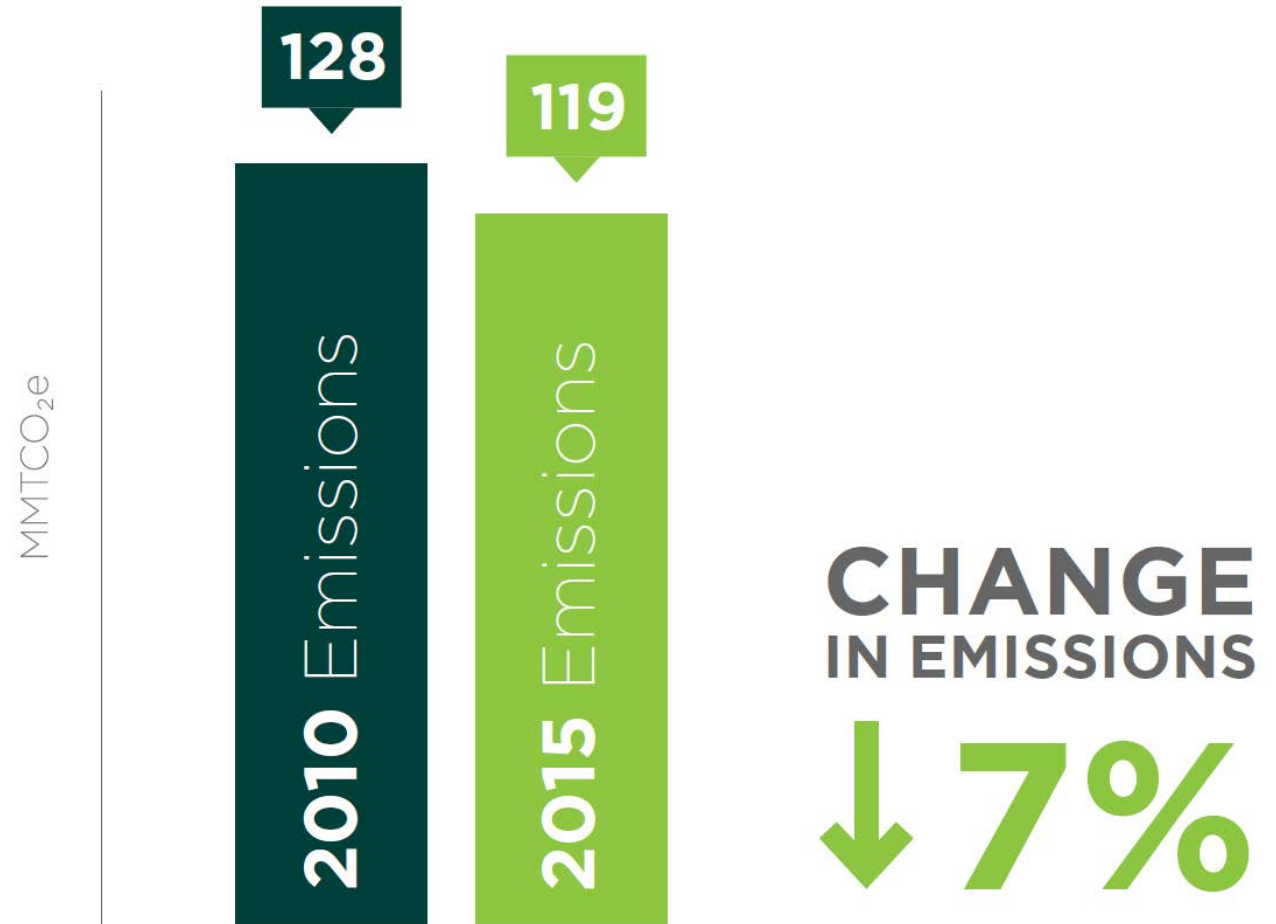


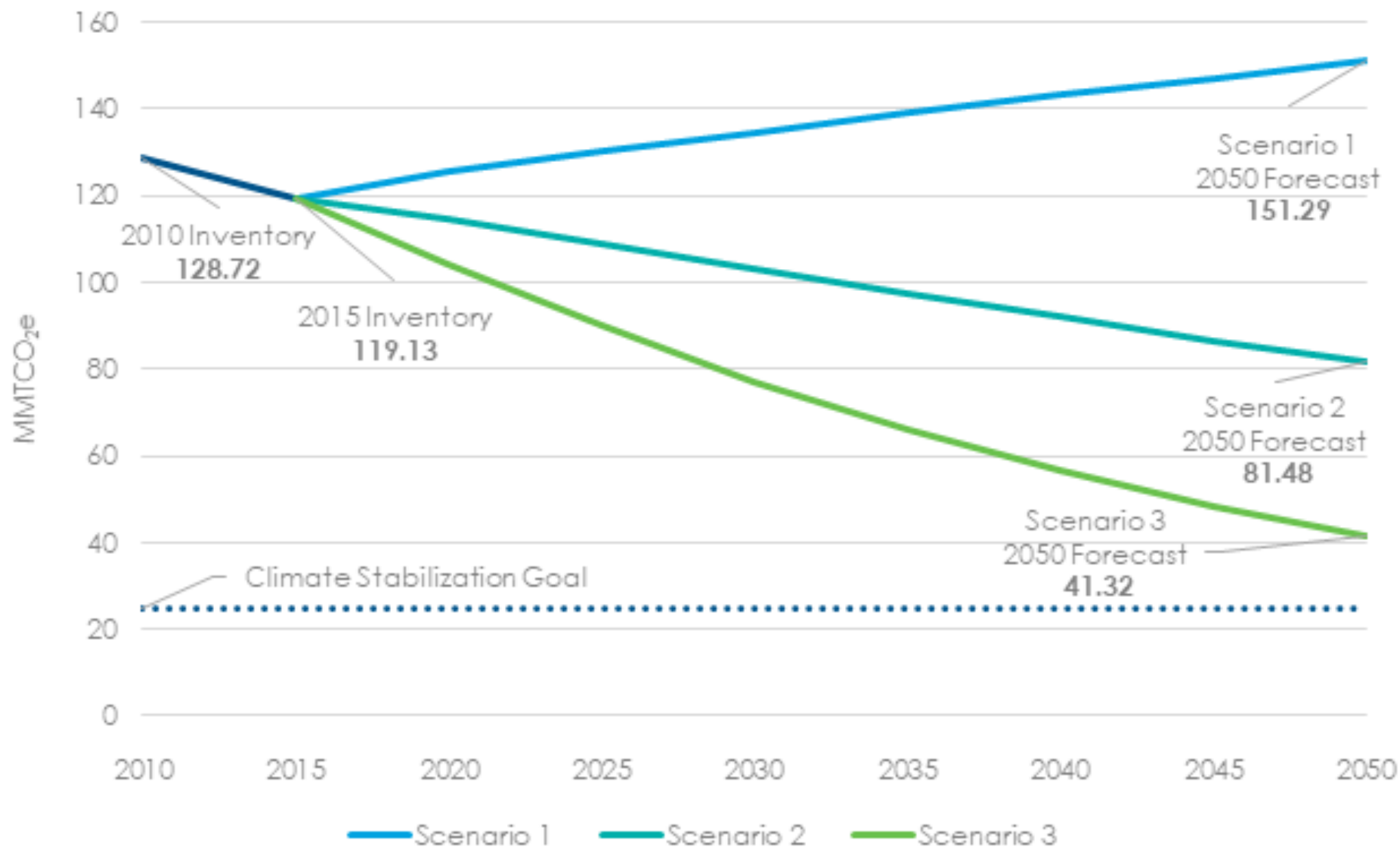
7% reduction 2010-2015
8.5% reduction per capita

Waste: 50% reduction

Buildings: 8% reduction

Transportation: 1% increase







Questions?



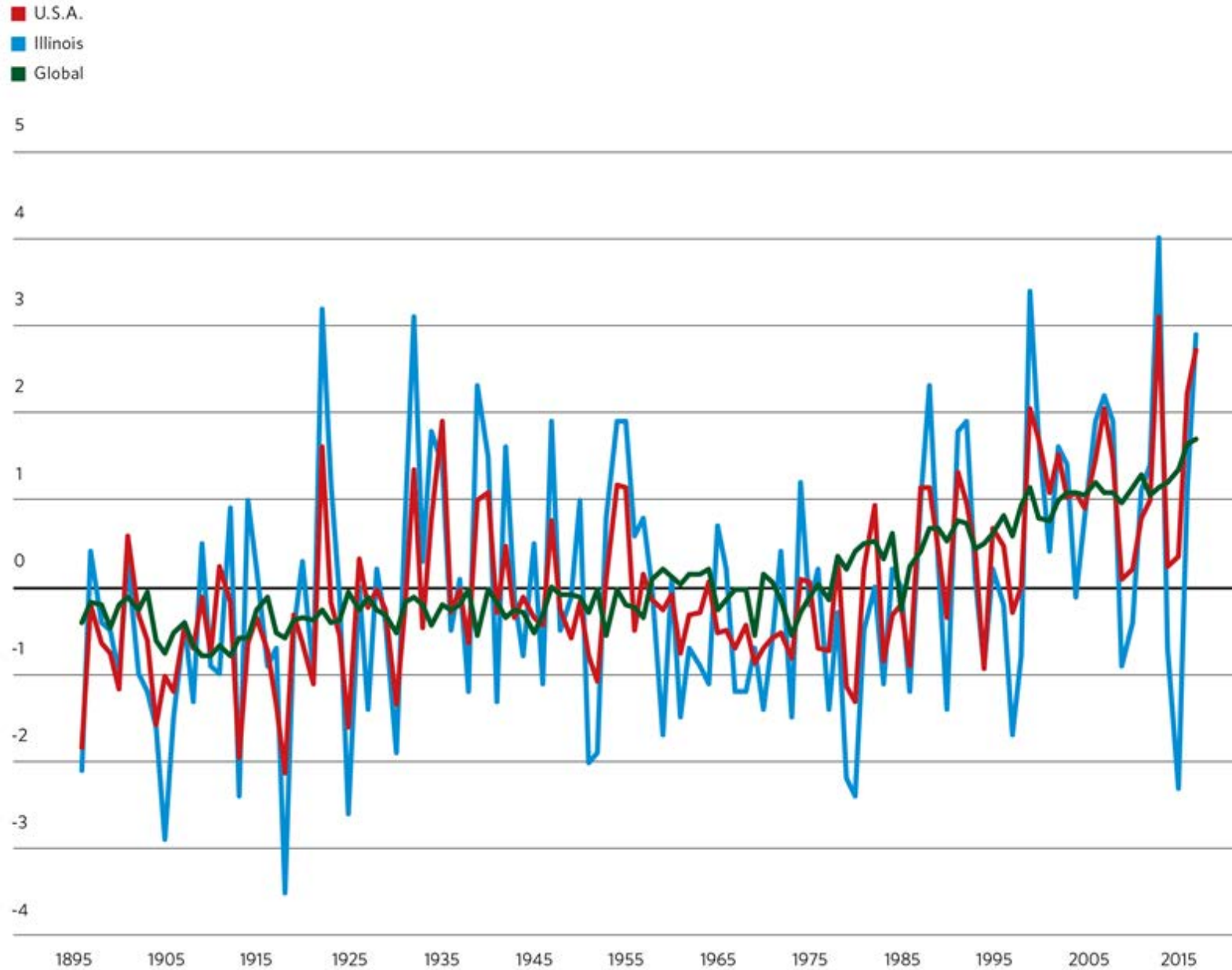
Climate vulnerability in Northeastern Illinois

Jared Patton

CMAP

Average temperature anomalies, in degrees Fahrenheit 1895-2015

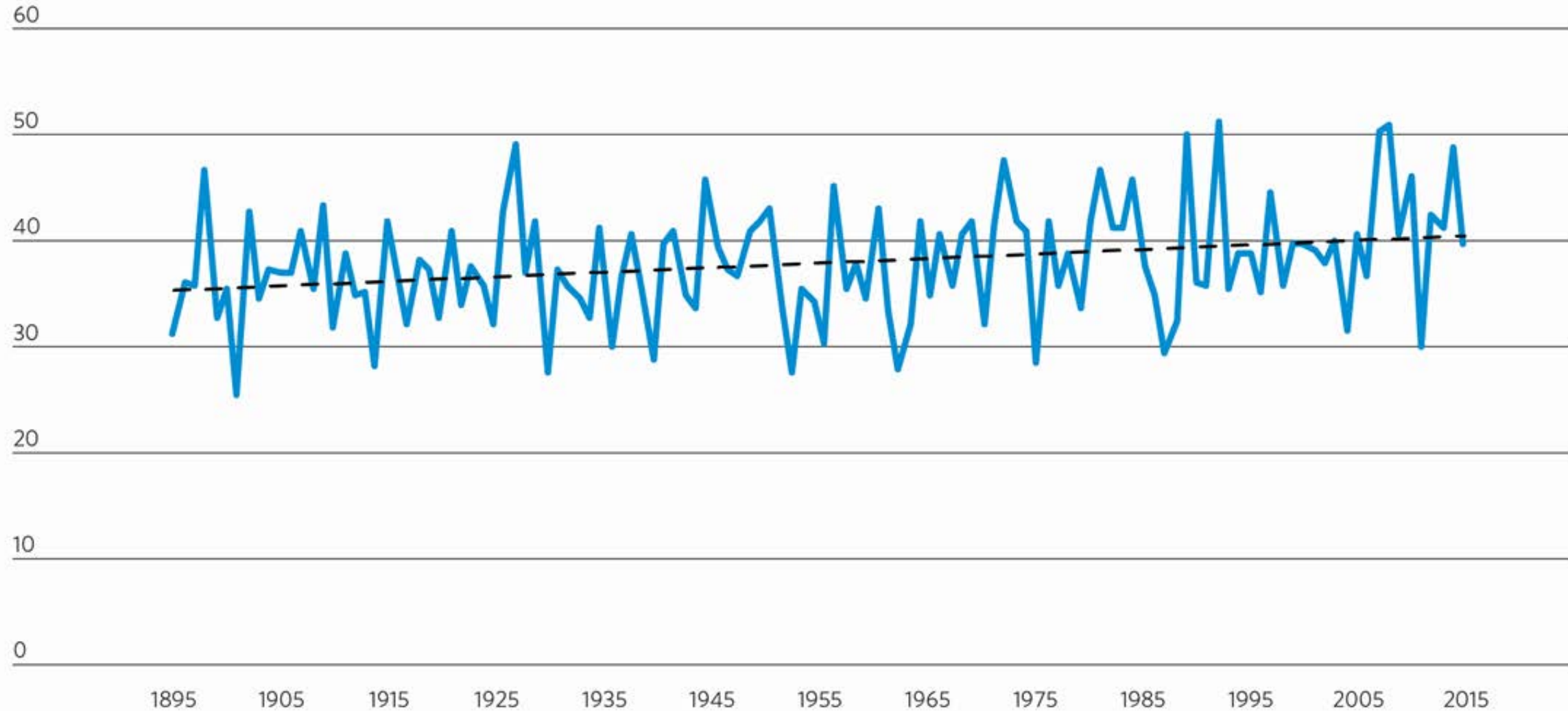
Source: National Centers for Environmental Information, "Climate at a Glance," National Oceanic and Atmospheric Administration, 2017.





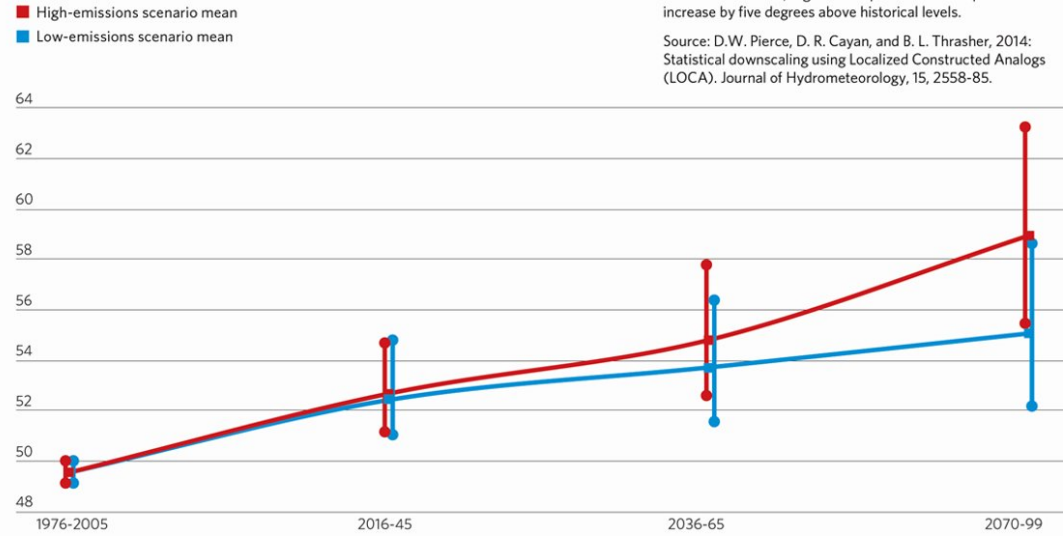
Average annual precipitation, in inches, Illinois, 1895-2015

Source: National Centers for Environmental Information, "Climate at a Glance," National Oceanic and Atmospheric Administration, 2017.





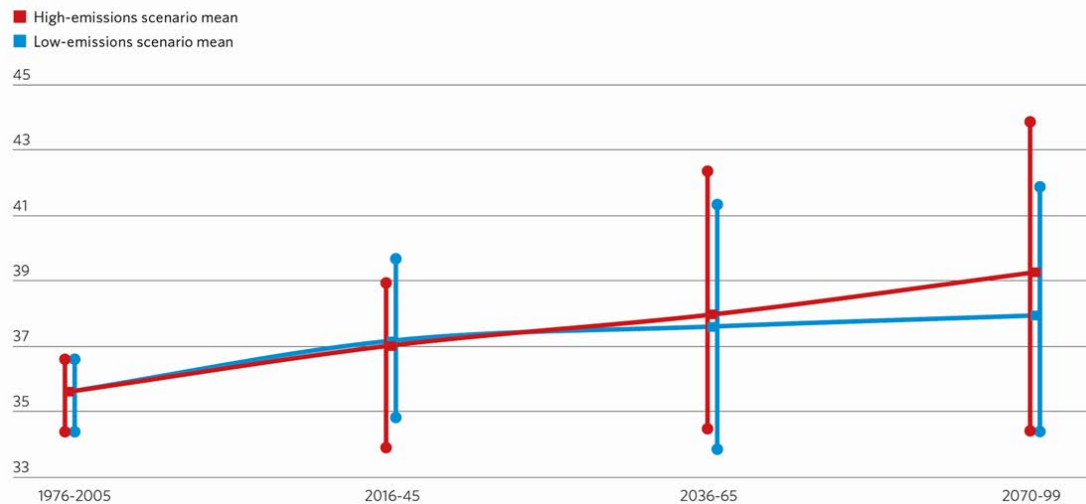
Range of projected daily average temperature, in degrees Fahrenheit, in northeastern Illinois



Temperature

- Warmer average temperatures
 - Precipitation
 - Ecosystem services
- Higher highs and higher lows
- More freeze/thaw events

Range of projected annual total precipitation, in inches, in northeastern Illinois



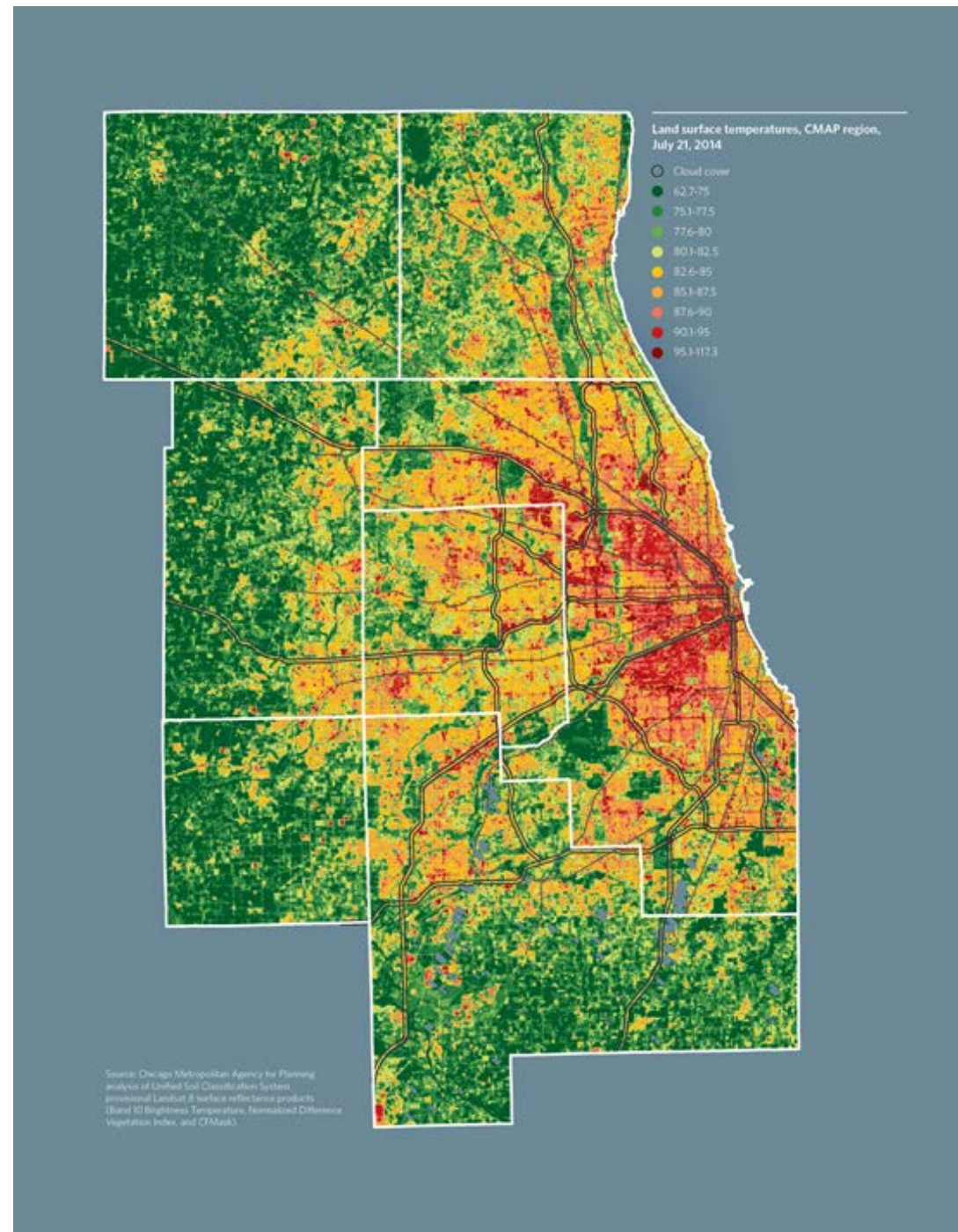
Precipitation

- More heavy rain events
- More periods of drought-like conditions
- Seasonal shifts



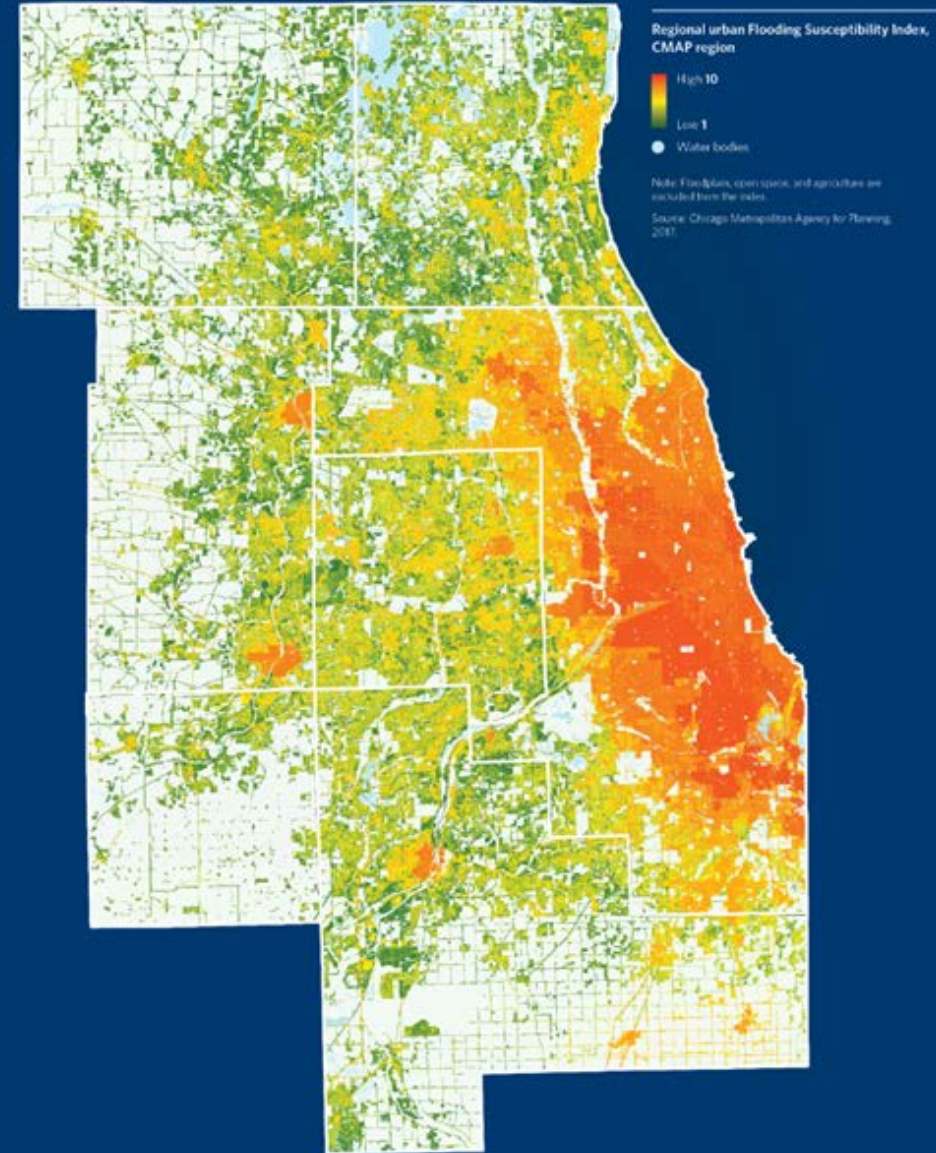
Warming temperatures

- Health impacts
- Infrastructure damage
- Agriculture and tourism
- Air quality
- Quality of life



Increased precipitation

- *Property damage*
- *Travel disruptions*
- *Economic impacts*
- *Quality of life*





External impacts

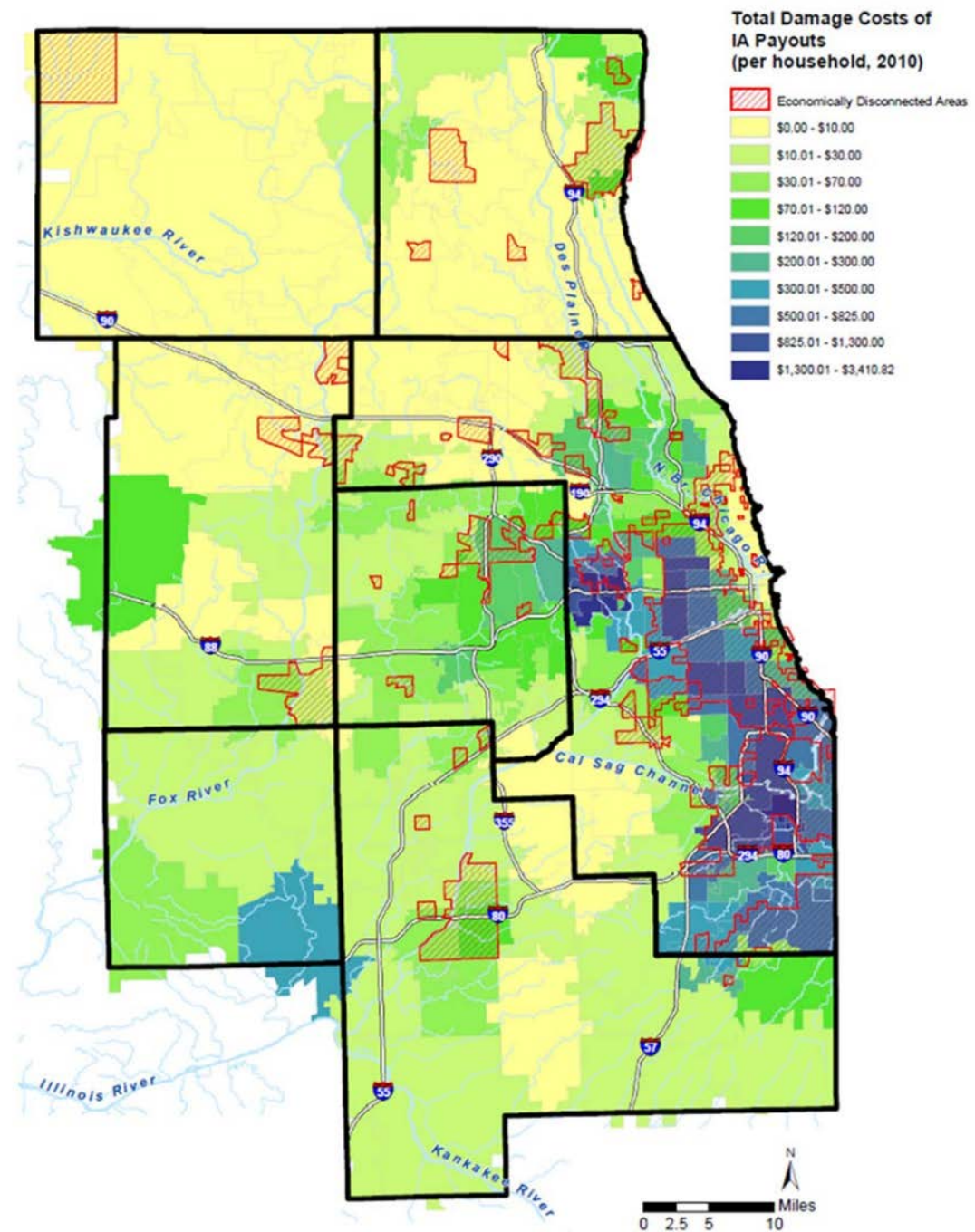
- Sea level rise
- Natural disasters
- Economic disruptions
- Federal funding
- Migration





Uneven impacts

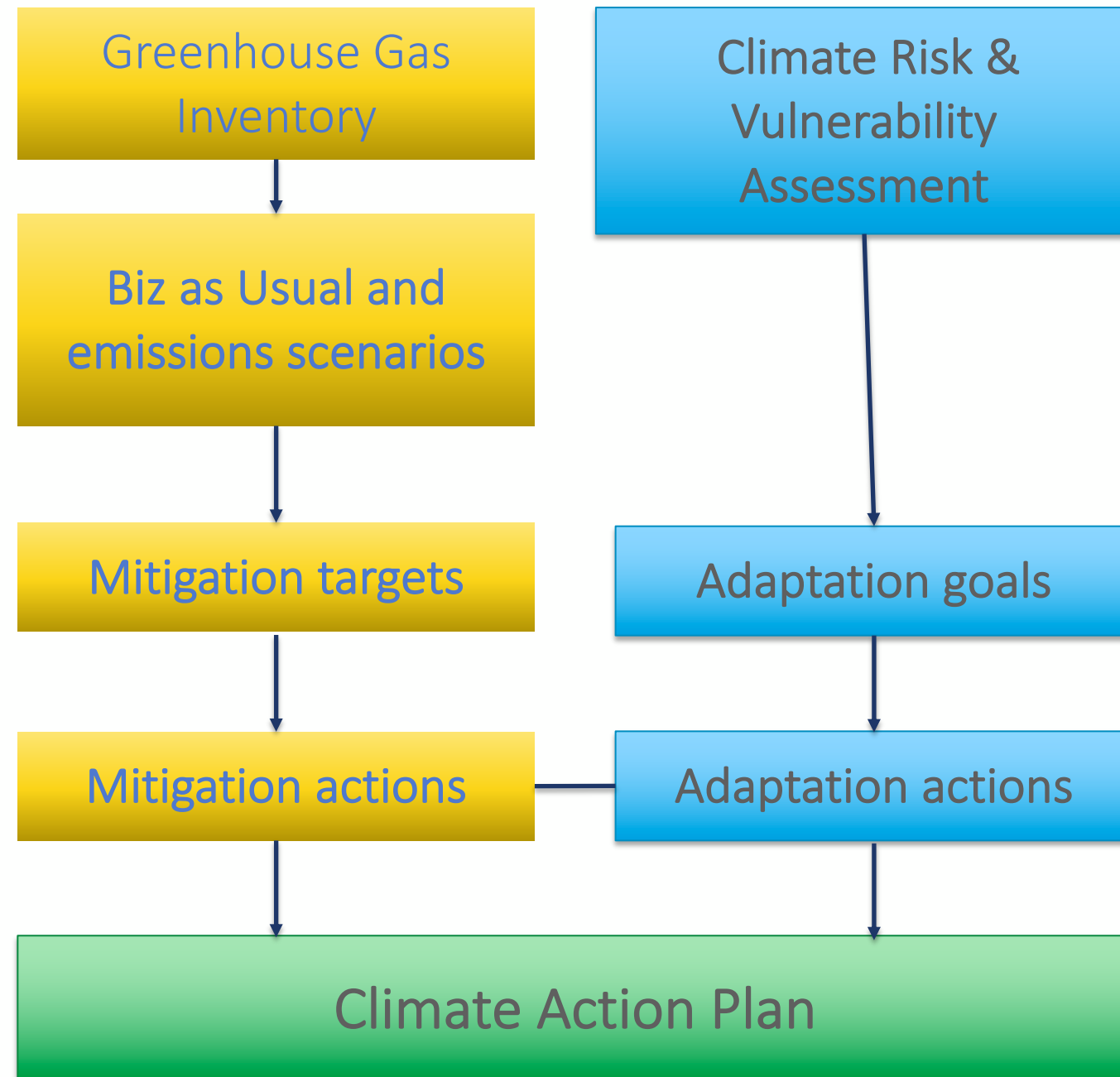
- *Low income and minority communities have the greatest vulnerability*
- *Impacts are not uniform within communities*



Source: Chicago Metropolitan Agency for Planning, 2017.



Climate Action Plan Model





Greenest Region Compact Framework

Connect Local Strategies and Goals to Regional
Climate Targets

Edith Makra

Metropolitan Mayors Caucus



**Greenest
Region
Compact**

COLLABORATING FOR SUSTAINABLE COMMUNITIES

The GRC in 3 Parts



1. Compact
2. Framework
3. Collaboration to address GRC goals



The GRC Framework

- Compilation of all Common Objectives, Strategies
 - Aligns with regional, national, global objectives
 - Links to resources & existing programs
- Adaptable Framework
- Use it to create a *community* sustainability plan
- Communities set priorities
- No metrics or reporting



[illegible]



GRC Framework for *Regional* Climate Action Plan

Mitigation Strategies

Achievable Community-Scale Strategies

GRC Goal – Reduce Greenhouse Gas Emissions

GRC Strategy –

Reduce emissions from municipal operations

Asphalt

- Warm-mix asphalt vs hot-mix asphalt
- 30-40% less CO₂
- 60-70% less NO_x

Not Achievable Strategy –

- Electrify bus fleet



GHG Emissions Reduction Target

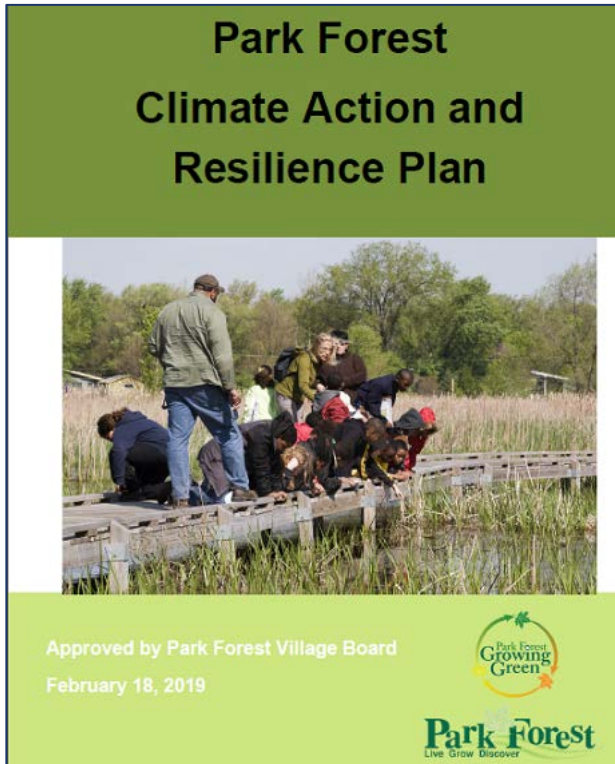


General Emissions Reduction Target:



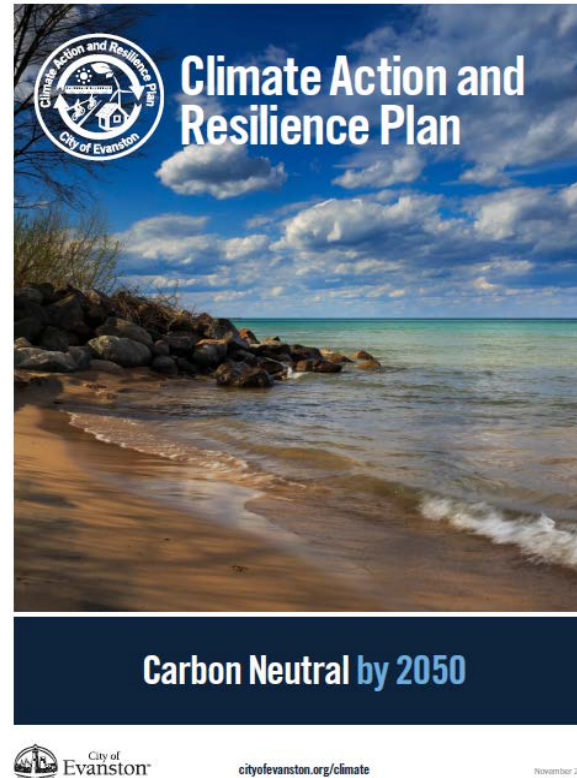
Uphold commitment to the Paris Agreement -

- 26 - 28% relative to 2005 levels by 2025
- and 80% by 2050



Park Forest

Reduce GHG 26% below
2010 levels by 2025



Evanston

Carbon neutrality by 2050



Chicago

Reduce GHG 80% below
1990 levels by 2050

Group Exercise

Choose a GRC Goal Category



-  1. Energy
-  2. Land use policies
-  3. Land Stewardship/ Urban Forestry
-  4. Mobility
-  5. Mobility/ Clean Fleets
-  6. Waste & Recycling
-  7. Stormwater Management/ Green Infrastructure
-  8. Water Distribution

Group Exercise

For each goal:

1. Rank strategies for degree of difficulty for a municipality to address

1 easiest – 5 most difficult

Objective: Identify top 1 or 2 mitigation strategies that municipalities can do now

2. For those strategies that are difficult at the municipal scale:

- a. What are the barriers?
- b. Which strategies should be addressed at a regional scale?

Objective: Identify 1-2 mitigation strategies that need regional collaboration to work

3. Report Out



2019

2020

2021

2022

2023



GRC

Mitigation
Workshops

Socialize This Work
Additional Funding

GHG

Climate Risk &
Vulnerability
Workshops

Reporting & Tracking Framework

ON TO 2050

Regional Climate
Action Plan

Regional Follow-up Projects



Chicago Metropolitan Regional Climate Action



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