# Chicago Metro Regional Climate Action Planning

# Preview

## MMC Environment Committee

October 20, 2020

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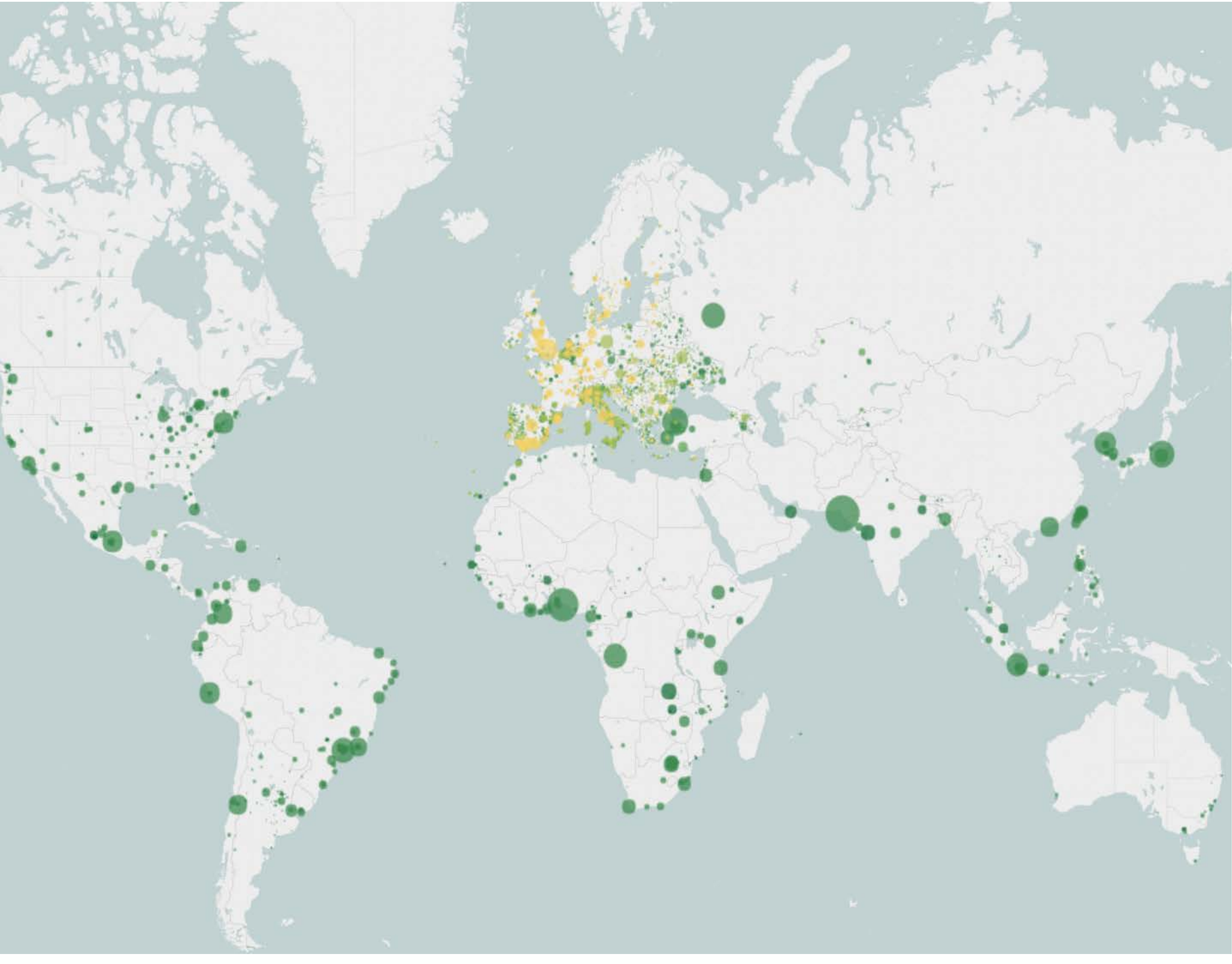
# Climate Action & Local Government

- Sustainability Actions
- Pledges
- Climate Plans



# Global Covenant of Mayors for Climate and Energy

10,000 CITIES

130+ COUNTRIES

800+ MILLION PEOPLE

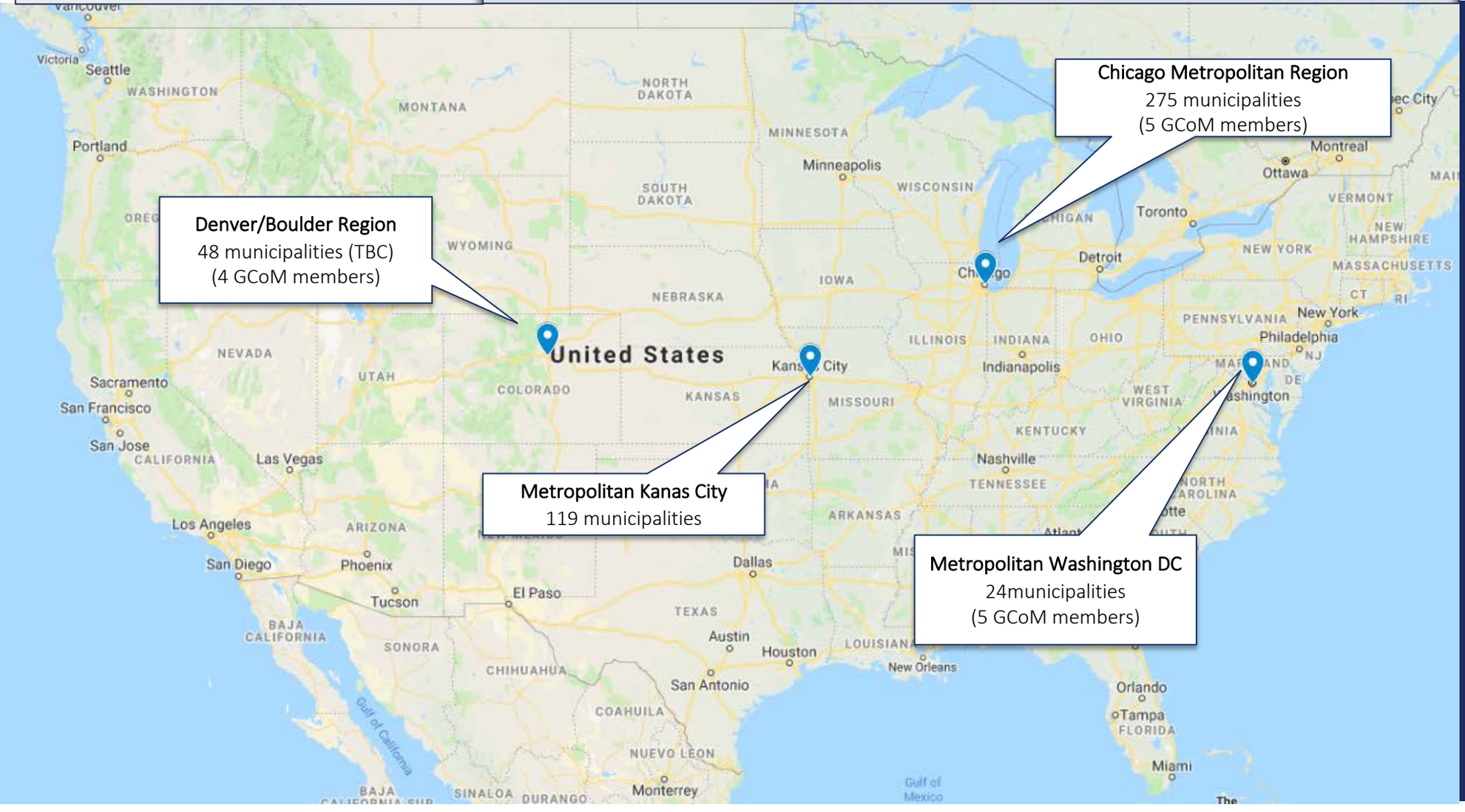
100+ GLOBAL PARTNERS (city networks, private partners, research institutions)

10+% OF THE GLOBAL POPULATION

*(only 5 municipalities in Illinois)*

GCoM USA Regional and Metro-scale Climate Leaders

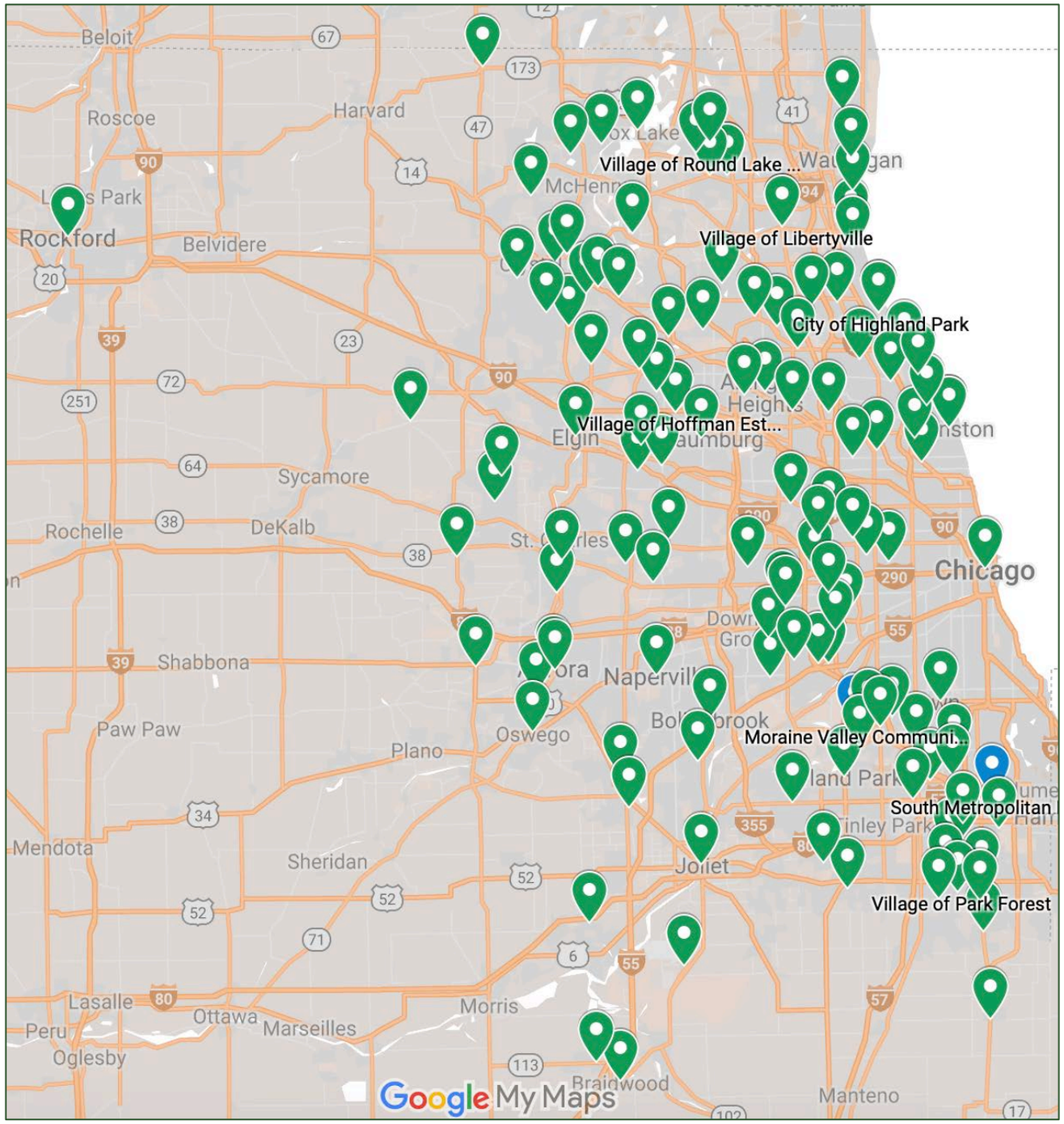
- **Technical support**
- **Knowledge exchange** between US regions and other regions
- **Promotion** of regional case studies through GCoM




Regional cooperation works in other countries

Chicago Region chosen as a pilot Regional and Metro-Scale Climate Leader to demo regional climate planning in US

*Climate Planning - local to global*




# Greenest Region Compact

GRC2

COLLABORATING FOR SUSTAINABLE COMMUNITIES

127 Municipalities

4 Counties

10 COGS

6 MILLION PEOPLE

Supporting consensus goals of the GRC

To comply with GCoM commitment:

## *Required steps*

1. ***GHG Inventory***
2. ***Biz as Usual (BAU) Projections***
3. ***GHG Reduction Targets***
4. ***Compile possible actions (GRC)***
5. ***Mitigation workshop***
6. ***Climate Risk and Vulnerability Assessment***
7. ***Adaptation Workshop (webinars)***
8. ***Climate Action Plan (Mitigation & Adaptation)***
9. ***Utilize Common Reporting Framework***

# *CLIMATE ACTION*

## Mitigation

Reducing greenhouse gas (GHG) emissions

## Adaptation

Preparing for the impacts we can’t avoid

# *Chicago Regional Climate Action Plan (CAP) Overview*

## Goal: Reduce GHG 80% by 2050

- Mitigation Objectives
  - Some *directly* reduce GHG
  - Or *supportive* actions
  - Energy
  - Transportation
  - Waste
  - Land & other supportive strategies

Step 8 – Draft CAP

# *Chicago Regional Climate Action Plan (CAP) Overview*

Goal: *Bounce back better?* or *Bounce forward?*

Climate Hazards:

- Heat and Health;
- Flooding and Homes;
- Flooding and Infrastructure;
- Flooding and Transportation;
- and Extreme Precipitation and Stormwater.

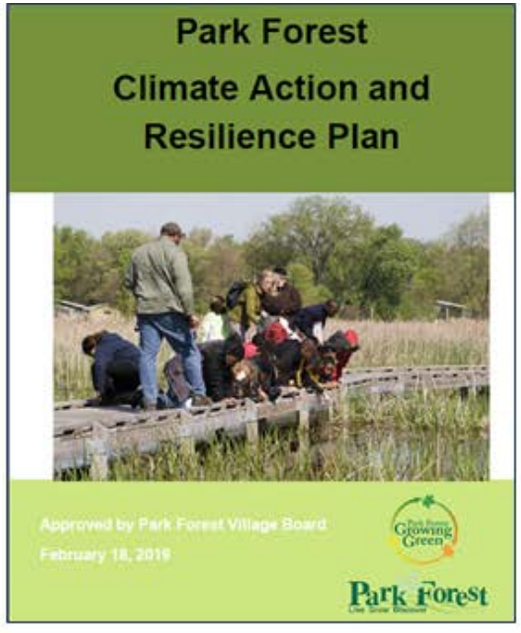
Equity

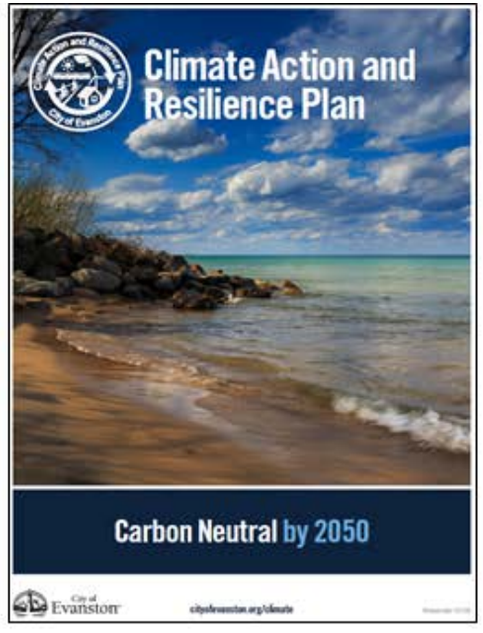
Adaptation Objectives

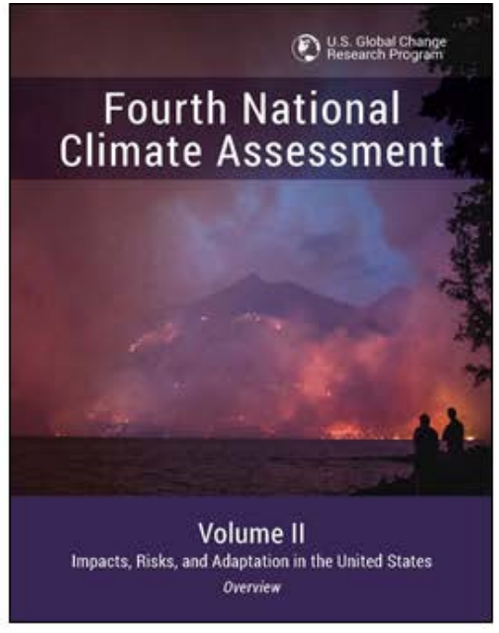
How should we state our resilience goal?

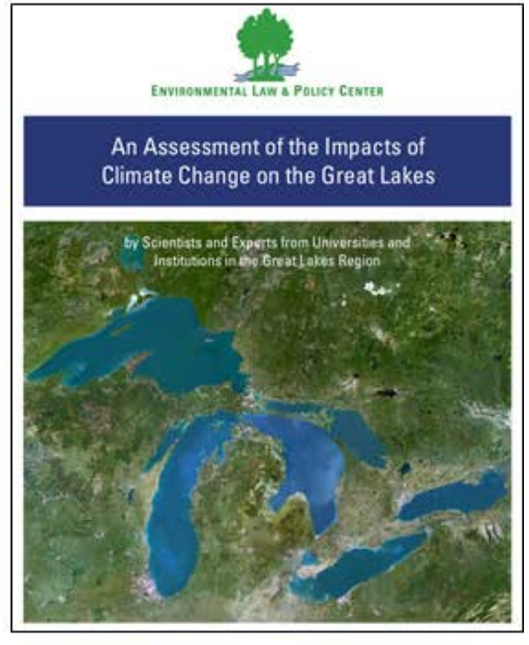
*Suggest a goal in Chat*

Step 8 – Draft CAP

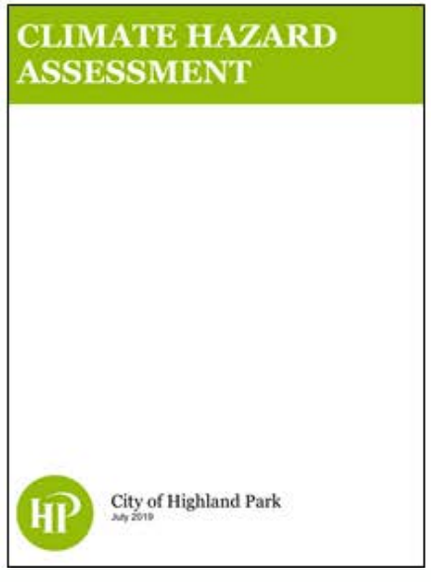

Park Forest
Climate Action and
Resilience Plan
Approved by Park Forest Village Board
February 18, 2019
Park Forest

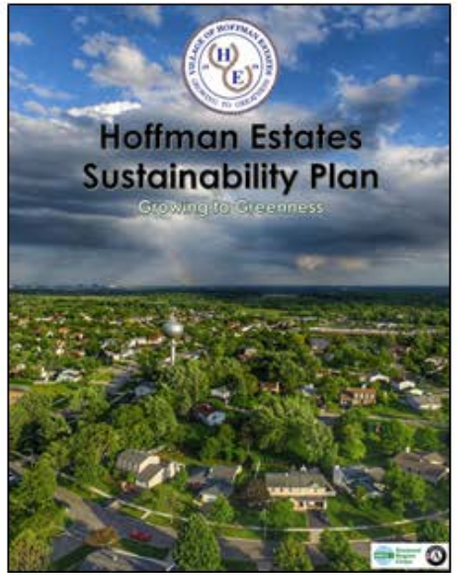

Climate Action and
Resilience Plan
Carbon Neutral by 2050
Evanston


U.S. Global Change
Research Program
Fourth National
Climate Assessment
Volume II
Impacts, Risks, and Adaptation in the United States
Overview


Environmental Law & Policy Center
An Assessment of the Impacts of
Climate Change on the Great Lakes
by Scientists and Experts from Universities and
Institutions in the Great Lakes Region


CHICAGO
CLIMATE
ACTION
PLAN
OUR CITY. OUR FUTURE.


CLIMATE HAZARD
ASSESSMENT
City of Highland Park
July 2019

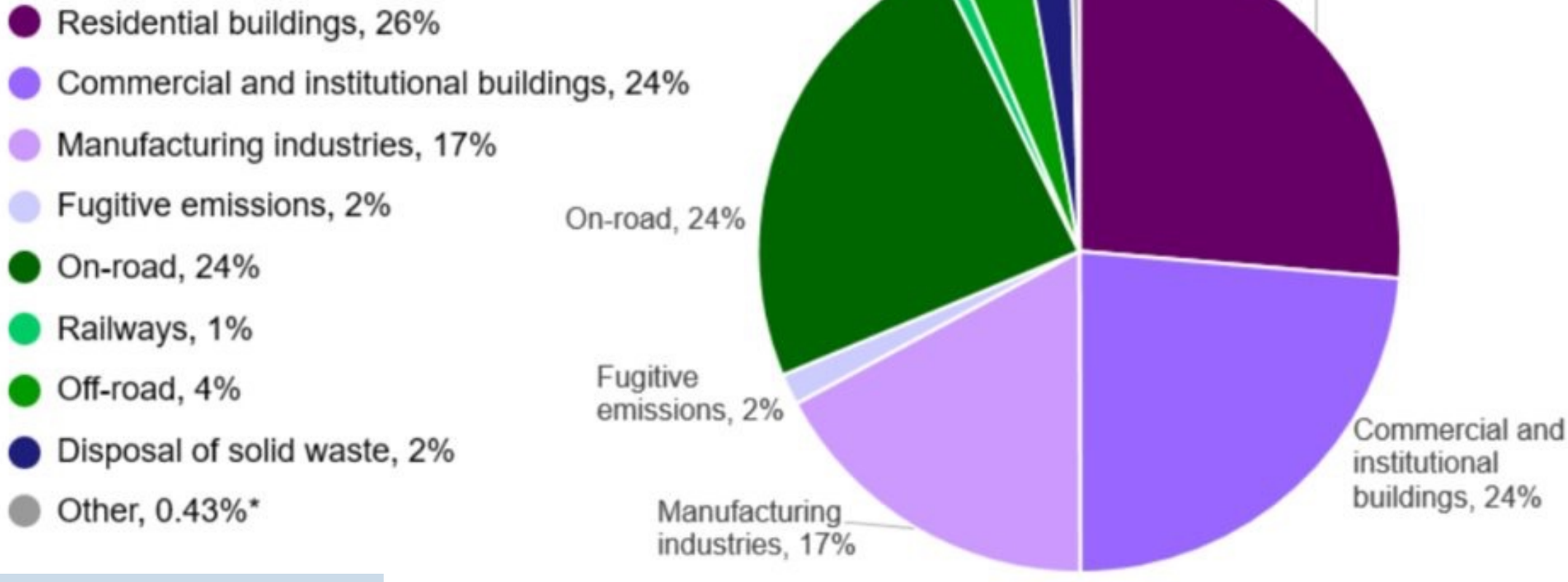

Hoffman Estates
Sustainability Plan
Growing to Greenness

+ 8 others

# *MITIGATION*

**REDUCING GREENHOUSE GAS EMISSIONS**

## Greenhouse gas emissions by subsector for Chicago region, 2015




Step 1 - GHG Inventory

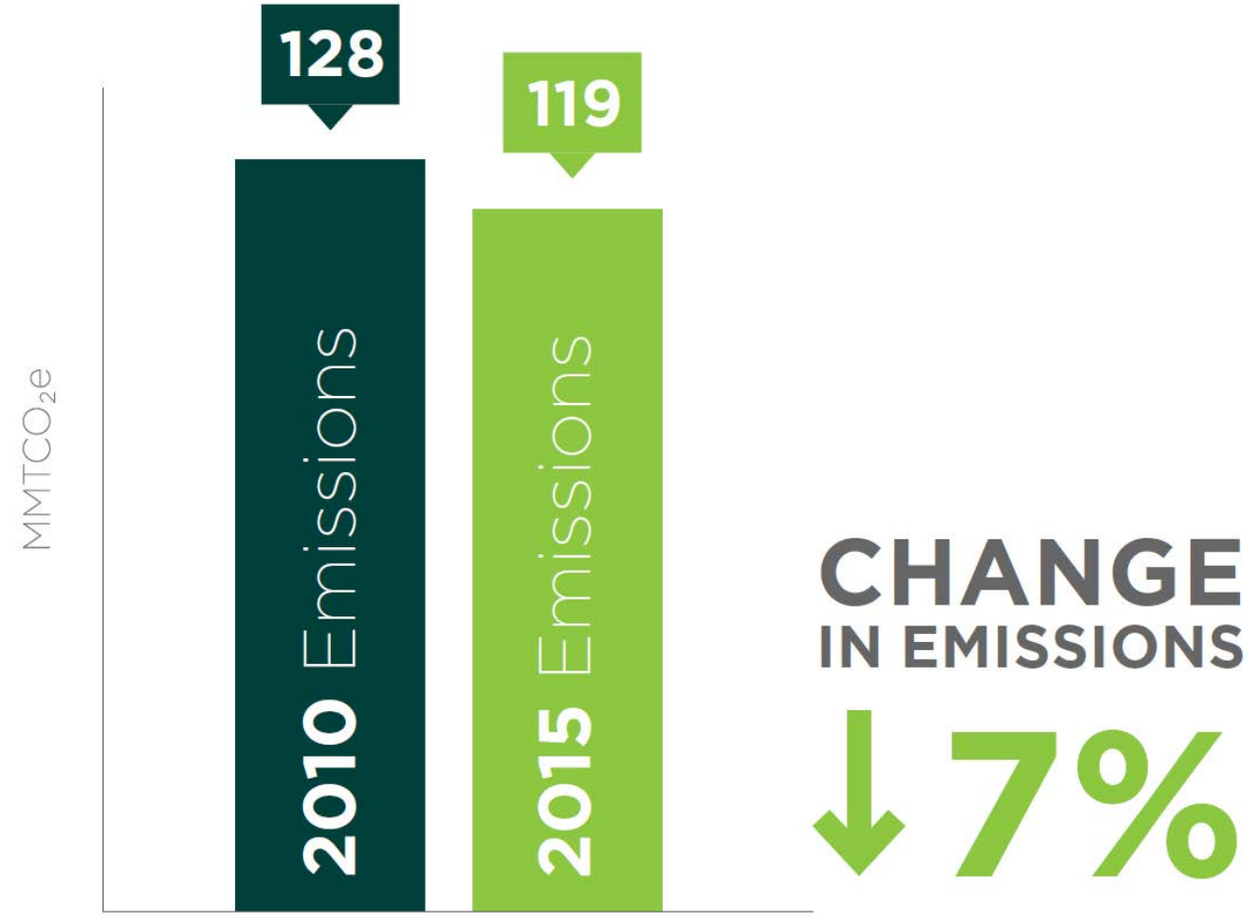
*7% reduction 2010-2015*

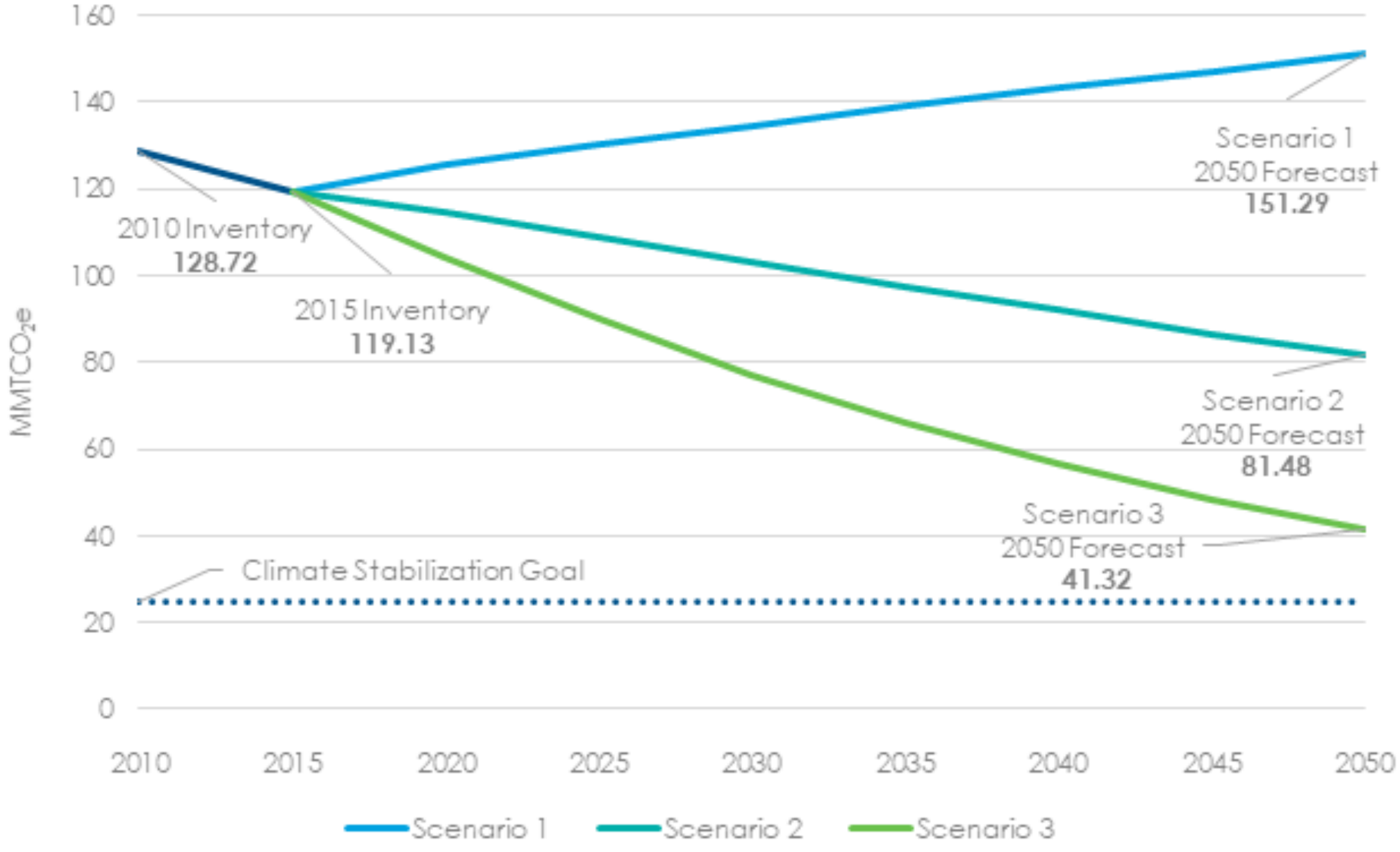
*8.5% reduction per capita*

*Waste: 50% reduction*

*Buildings: 8% reduction*

*Transportation: 1% increase*






## Step 2 – Biz as Usual

# *GHG Reduction Goal*

80 percent reduction

Relative to 2005 levels

By 2050

| Sector | Percent Reduction |
|---|---|
| Stationary energy | 86% |
| Transportation | 60% |
| Waste | 74% |
| **Total** | **80%** |

Step 3 - GHG Reduction Target

# *HOW  DO YOU FEEL ABOUT THE GOAL: 80% Reduction By 2050?*

**ZOOM POLL**

# *The Greenest Region Compact*

## *Consensus Sustainability Goals in 10 Categories*

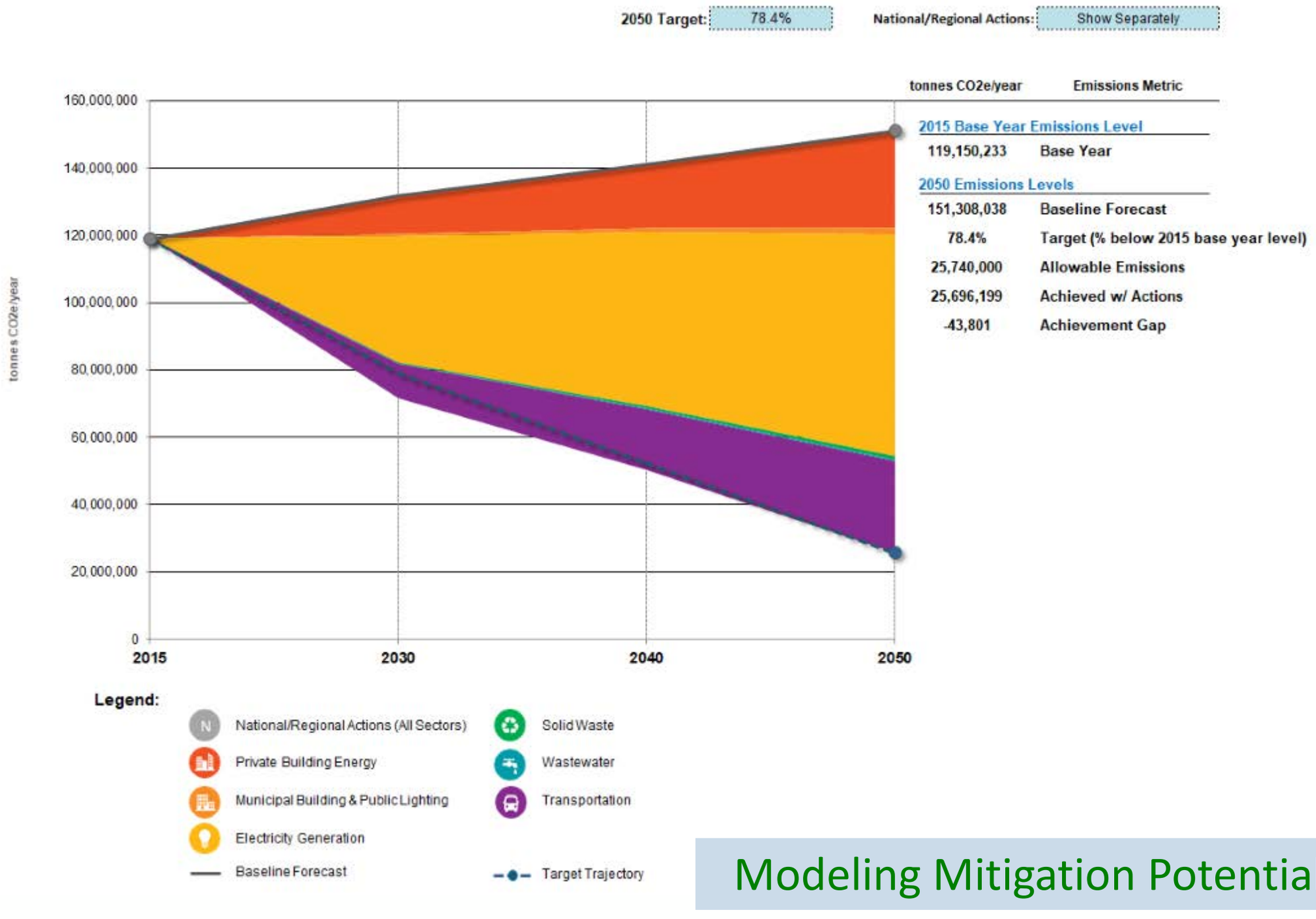
- Climate
- Economic Development
- Energy
- Land
- Leadership
- Mobility
- Municipal Operations
- Sustainable Communities
- Water
- Waste

Step 4 – Compile Possible Strategies

# Step 5 - Mitigation Workshops

*Support efficient transportation that uses resources wisely*

| | |
|---|---|
| *M15* | **Support regional transportation innovation** |
| *M16* | **Support coordinated investment to improve efficiency in passenger and freight railroads** |
| *M17* | **Collaborate to support a network of alternate fueling infrastructure** |
| *M18* | **Advocate for broad adoption of clean fuel fleets (i.e utilities, businesses, other agencies etc.)** |
| *M19* | **Support strong national fuel efficiency standards** |
| *M20* | **Seek both public and private partnership to finance transportation system improvements** |
| *M21* | **Strategically manage parking policies and priorities to advance sustainability** |
| *M22* | **Create Safe Routes to School** |




# Modeling Mitigation Potential

# Mitigation Strategies


## Use less energy

- More efficient buildings
- Less driving

## User cleaner energy

- More wind and solar
- More electric vehicles and buildings

## Capture carbon

- Rely on nature

objective

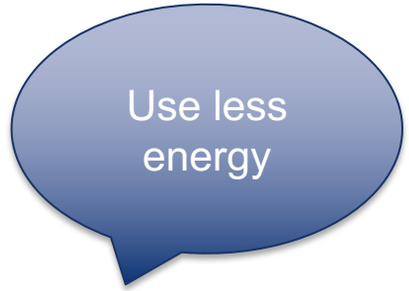
# *Optimize Building Energy Efficiency*

Is this doable?

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Efficient water utilities & clean energy to process water | Lead | Proven | $$ |

Lead
Enact
Encourage

# *Optimize Building Energy Efficiency*



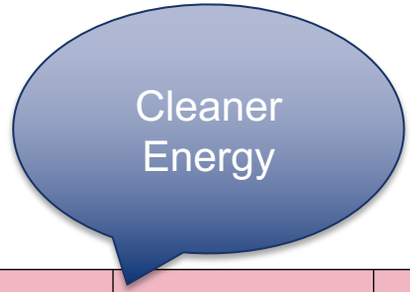

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Retrofit buildings and facilities | Lead | Proven | $$ |
| Promote energy efficiency and energy management to the private sector, i.e. demand response, PACE financing | Encourage | Proven | $ |
| Promote home energy efficiency | Encourage | Proven | $ |
| Efficient water utilities & clean energy to process water | Lead | Proven | $$ |

# *Advance Clean Energy*

Less energy + renewable = clean energy

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Support robust building energy codes & building performance standards | Enact | Evolving | $ |
| Modernize municipal franchise agreements to leverage investment in clean energy | Enact | Contingent | $$ |
| Promote high performance and net zero *new construction* | Encourage | Evolving | $$$ |
| Adapt zoning codes and streamline development processes to accelerate renewable | Enact | Proven | $ |

# *Decarbonize Energy Sources*




| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Build renewable energy and energy storage capacity | Lead, Encourage | Evolving | $$ |
| Engage the community in chosing renewable energy through procurement, community solar, etc | Encourage | Evolving | $ |
| Partner with utilities to decarbonize the regional power grid | Encourage | Aspirational | $$$$ |
| Explore renewable district energy solutions | Encourage | Aspirational | $$$$ |
| Accelerate building electrification | Encourage | Aspirational | $$$$ |

# *Reduce Vehicle Miles Traveled*


| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Prioritize transit-oriented development | Enact | Evolving | $$$ |
| Collaborate to enhance & expand regional transit | Encourage | Proven | $$$ |
| Plan roadways to benefit all road users & promote active transportation | Enact | Proven | $$ |
| Build and maintain safe, resilient, and accessible active transportation infrastruture | Lead, Encourage, Enact | Proven | $$ |
| Encourage walking, biking and transit use | Encourage | Proven | $ |
| Strategically manage parking policies | Lead | Evolving | $ |

# *Decarbonize Transportation*


| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Create a network of EV chargers | Lead | Evolving | $$ |
| Transition fleets and passenger vehicles to low & zero-emission vehicles | Lead | Evolving | $$$ |
| Enact and enforce anti-idling policies | Enact | Proven | $ |
| Adapt utility and local government development processes to accelerate EV charging infrastructure | Enact | Evolving | $ |

# *Demonstrate Leadership in Sustainability*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Set sustainability targets that align with the regional CAP | Enact | Proven | $ |
| Sustain a robust and resilient local green economy | Lead | Proven | $ |
| Adopt the GRC & sustainability plan aligned with the regional CAP | Enact | Proven | $ |
| Integrate smart technology into operations | Lead, Encourage | Evolving | $$ |
| Manage operations, purchasing and events sustainably | Enact | Proven | $ |

# *Reduce & Manage Waste Sustainably*

Methane & energy

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Capture fugitive emissions from landfills | Encourage | Contingent | ? |
| Increase capacity for regional composting and biological treatment of waste | Lead | Proven | $$$ |
| Reduce waste generation through reuse and smart consumption behaviors | Encourage | Evolving | $ |
| Capture and convert wastewater biogas to energy | Lead, Encourage | Proven | ? |
| Increase the diversion of recyclable material and organic waste from landfills | Encourage | Proven | $$ |

# *Sustain Ecosystems to Sequester Carbon*

Rely on nature

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Manage public and private landscapes to optimize ecosystem services and support biodiversity | Lead, Encourage | Proven | $$ |
| Plant trees and sustain the urban forest | Lead, Encourage | Proven | $ |
| Protect and restore soil integrity | Enact, Encourage | Evolving | $ |

# *ADAPTATION*

PREPARING FOR THE CHANGES WE CAN'T AVOID


Lands in Transition
CMAP


Stormwater and Flooding
CMAP


Climate Resilience
CMAP


Water Resources
CMAP


Natural Resources
CMAP


Integrating Green Infrastructure
CMAP


Local Food
CMAP


FORESIGHT
ENERGY STRATEGY PAPER

# *Climate Risk and Vulnerability Assessment*

- *Basic assessment of the region's risk*
- *Relies on existing research*
- *Not location-specific*

***Hazards***

| Climate Hazard | Probability | Consequence | Risk |
|---|---|---|---|
| Extreme Heat | 3 | 3 | 9 |
| Drought | 2 | 3 | 6 |
| Severe Thunderstorms | 2 | 2 | 4 |
| Flooding | 3 | 3 | 9 |
| Severe Winter Weather | 2 | 2 | 4 |

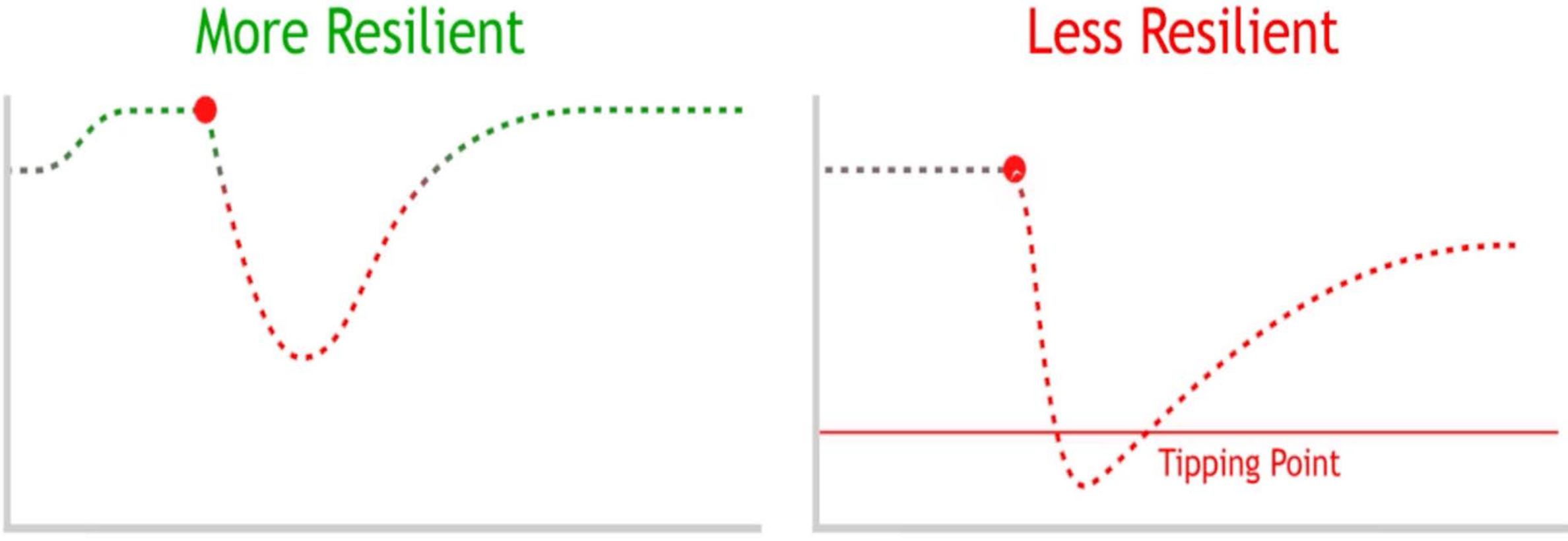
# The Steps to Resilience

1. Explore Hazards
2. Assess Vulnerability & Risks
3. Investigate Options
4. Prioritize & Plan
5. Take Action

Incorporate Climate Risk

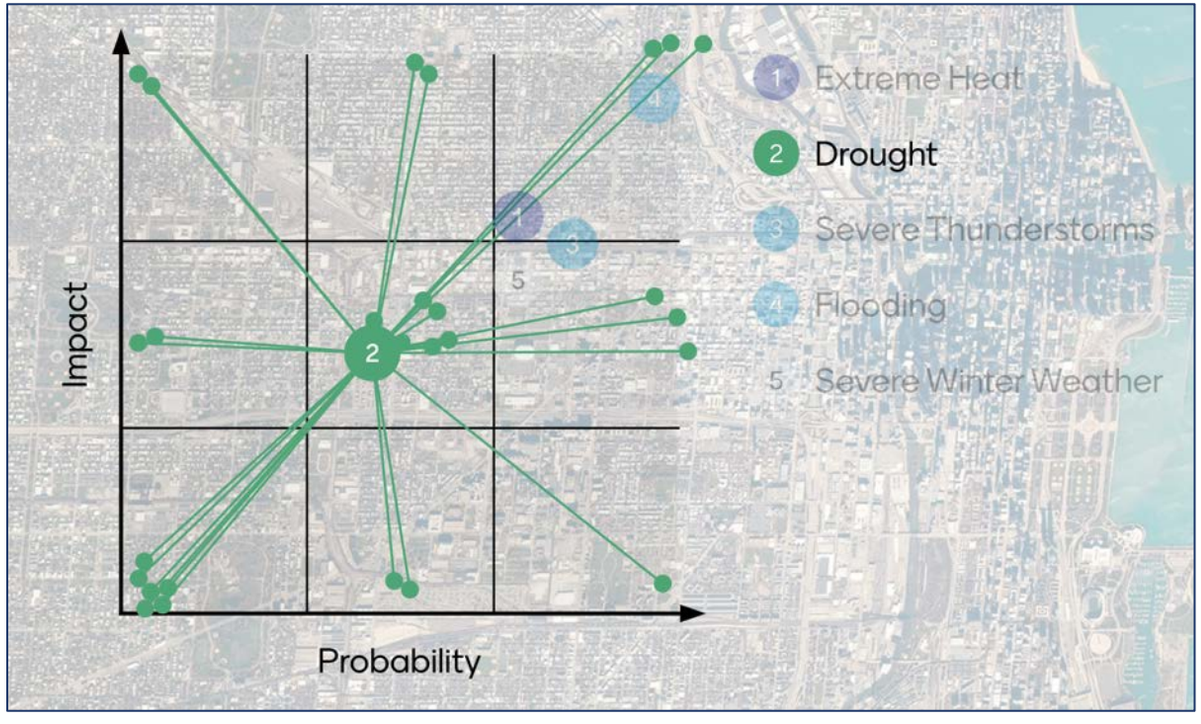
Traditional Decision Making

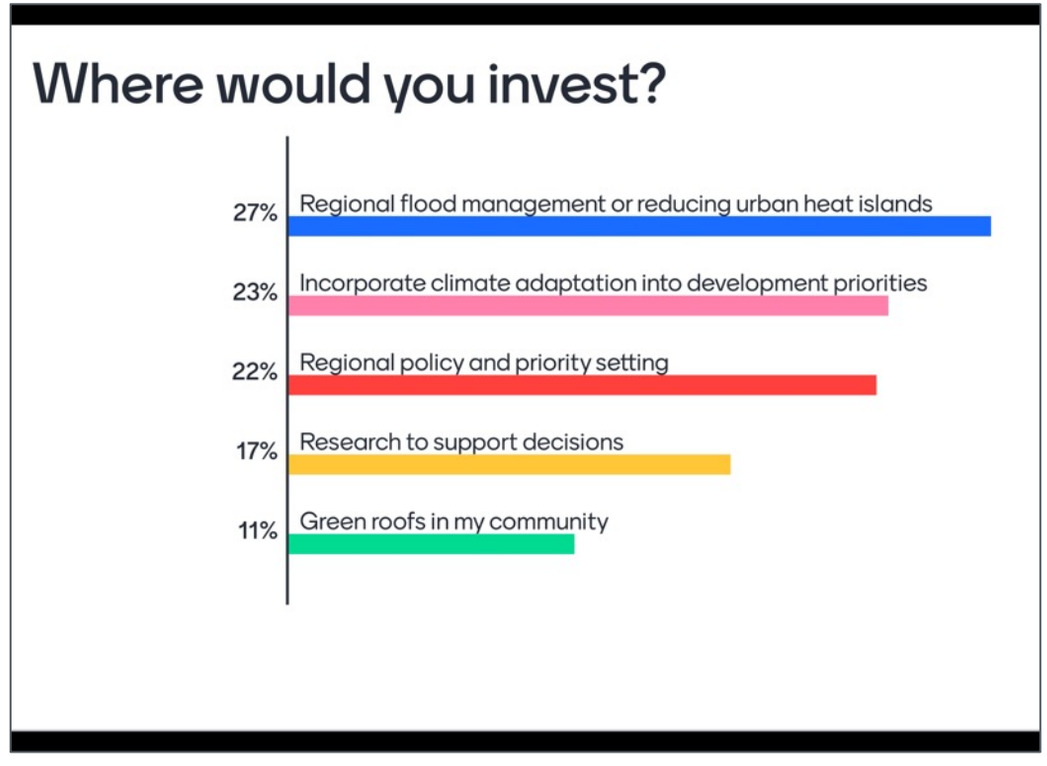
# Resilient communities can withstand and recover from impacts, stressors, and shocks



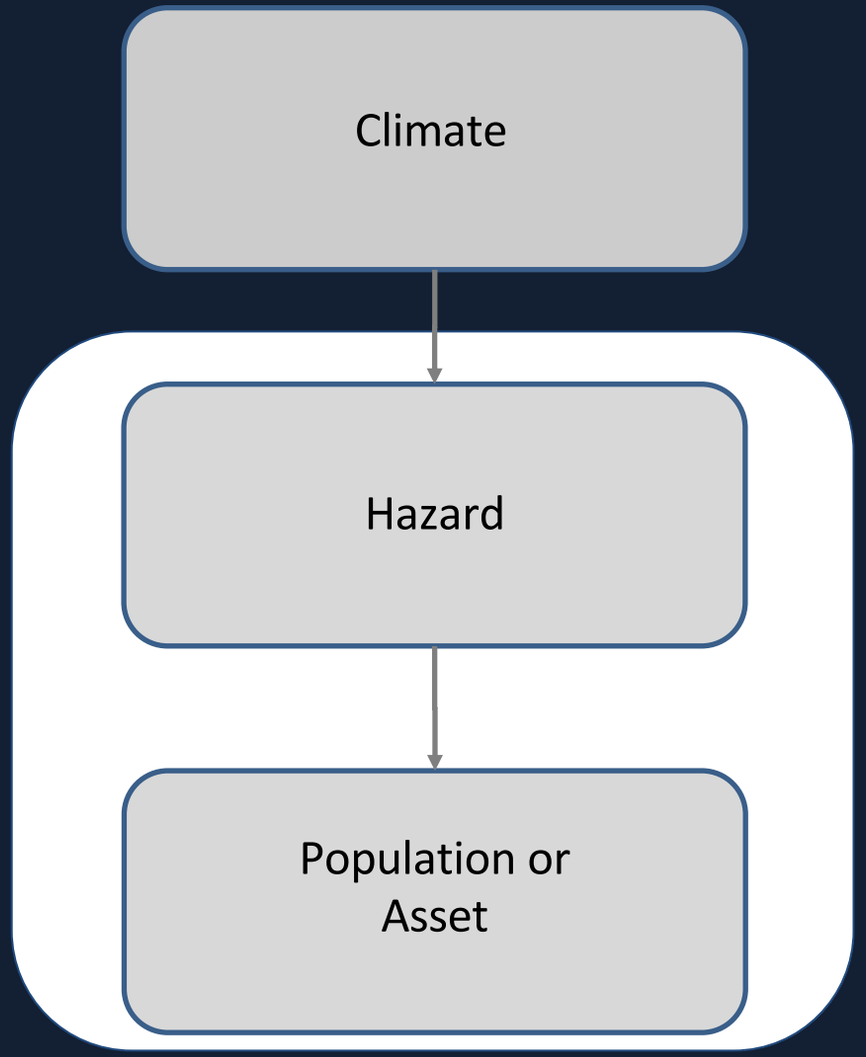

U.S. Climate Resilience Toolkit

# Step 6 - Adaptation Workshops



# Impacts involve both a hazard and an asset



# Adaptation Strategies


## Prepare for future changes

- Retrofit existing infrastructure
- Better planning and development
- Use natural systems and maximize co-benefits

## Collaborate

## Focus on equity

## Bounce forward

- Recovery is an opportunity for renewal

## Build social resilience

- Communicate
- Connect residents to resources

# *Engage and Educate the Community*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Educate residents about weather hazards and risks. Encourage preparation | Lead | Proven | $ |
| Educate residents about services that support health and wellness. | Encourage | Proven | $$ |
| Educate the community about flood risks and ways to prepare for floods on their property. | Encourage | Evolving | $$ |

# *Incorporate equity and inclusion*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Collaborate to ensure residents most vulnerable to heat, air pollution and flooding are connected to emergency relief services | Lead, Encourage | Evolving | $$ |
| Ensure that high quality essential human services programs are available and utilized | Encourage | Proven | $$ |
| Provide effective and accessible cooling interventions to vulnerable residents | Lead, Encourage | Evolving | $$ |
| Assure community education messages are accessible in all languages and formats | Lead | Proven | $ |
| Support local food production by assuring access to affordable land | Encourage | Evolving | $$$ |

# *Promote collaborations, partnerships and build capacity*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Collaborate to manage public and private landscapes to optimize ecosystem services and support biodiversity | Encourage | Proven | $$$ |
| Prioritize safe practices to reduce accidental injuries and death | Lead, Encourage | Proven | $$ |
| Facilitate compliance of federal air quality standards by businesses | Encourage | Contingent | $$ |
| Collaborate to develop an emergency transportation and logistics plan to move vital resources | Lead, Encourage | Evolving | $$ |
| Collaboratively manage urban heat islands | Encourage | Evolving | $$$ |

# *Promote collaborations, partnerships and build capacity*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Support private well-owners in water quality monitoring and stewardship | Encourage | Proven | $$ |
| Collaborate with regional and state agencies to sustainably manage stormwater | Encourage | Evolving | $$ |
| Collaborate with transportation agencies to share real-time roadway conditions | Encourage | Evolving | $ |
| Collaborate to encourage active and healthy lifestyles | Encourage | Proven | $ |

# *Enact plans and policies focused on adaptation and resilience*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Manage urban forests | Lead, Encourage, Enact | Proven | $$ |
| Promote connected, complete and walkable neighborhoods | Lead, Encourage, Enact | Evolving | $$ |
| Enact and enforce land use policies to conserve land | Lead, Encourage, Enact | Proven | $$$ |
| Incentivize or require resilient building design | Enact | Evolving | $$ |

# *Enact plans and policies focused on adaptation and resilience*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Proactively update codes to reflect evolving climate conditions | Enact | Evolving | $$$ |
| Conduct climate vulnerability assessments to identify risks to local infrastructure | Lead | Evolving | $$ |
| Require tree cover for parking lots | Enact | Proven | $ |
| Prioritize transit-oriented development and transit-supportive land uses | Encourage | Evolving | $$$ |

# *Enact plans and policies focused on adaptation and resilience*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Guide future development to conserve nature and drainage | Enact | Evolving | $$$ |
| Protect and restore soil integrity | Enact | Aspirational | $$$$ |
| Enact and enforce outdoor watering regulations responsive to drought conditions | Enact | Proven | $$ |
| Protect surface and groundwater from runoff and contamination | Encourage, Enact | Proven | $$$ |

# *Enact plans and policies focused on adaptation and resilience*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Enhance natural features of stormwater detention and retention systems | Enact | Proven | $$ |
| Incentive overhead basement sewer conversion | Encourage | Proven | $$ |
| Integrate Illinois State Model Local Stormwater Ordinance | Enact | Proven | $$$ |
| Promote Illinois Dept of Public Health Indoor Air Quality Standards to property managers | Lead, Encourage | Contingent | $ |

# *Adapt operations & investments for future climate conditions*

| Strategy | Municipal Role | Solution Status | Cost |
|---|---|---|---|
| Establish green infrastructure and include in capital improvement plans | Lead, Encourage, Enact | Proven | $$$$ |
| Target street trees, benches, and rain gardens along current and future pedestrian corridors | Enact | Proven | $$ |
| Enhance parks, open space, and recreational opportunities accessible to all residents | Lead | Proven | $$$ |
| Operate an efficient water utility that delivers clean, healthful, water | Lead | Proven | $$$ |

# *CHICAGO REGIONAL CLIMATE ACTION PLAN (CAP)*

FEEDBACK

DECEMBER RELEASE

## *HOW USEFUL IS THIS PLAN TO YOUR MUNICIPALITTY/LOCAL GOV?*

**ZOOM POLL**

# *WHO NEEDS TO SEE AND SUPPORT THIS PLAN?*

**ZOOM POLL**

# *HOW DO WE SPARK ACTION FROM THIS PLAN?*

**WRITE SUGGESTIONS IN THE CHAT**

# Chicago Metropolitan Regional Climate Action

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