



Chicago Metro Regional Climate Action Planning Preview



CMAP ENR Committee
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Edith Makra, MMC

Jared Patton, CMAP



GCoM USA Regional and Metro-scale Climate Leaders



- Technical support
- Knowledge exchange between US and other regions



A European Union Programme



Regional cooperation works in other countries

4 pilot Metro-Scale Climate Leaders to demo regional climate planning in US



Required steps

To comply with GCoM
commitment:

- 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***

Chicago Regional Climate Action Plan (CAP) Overview

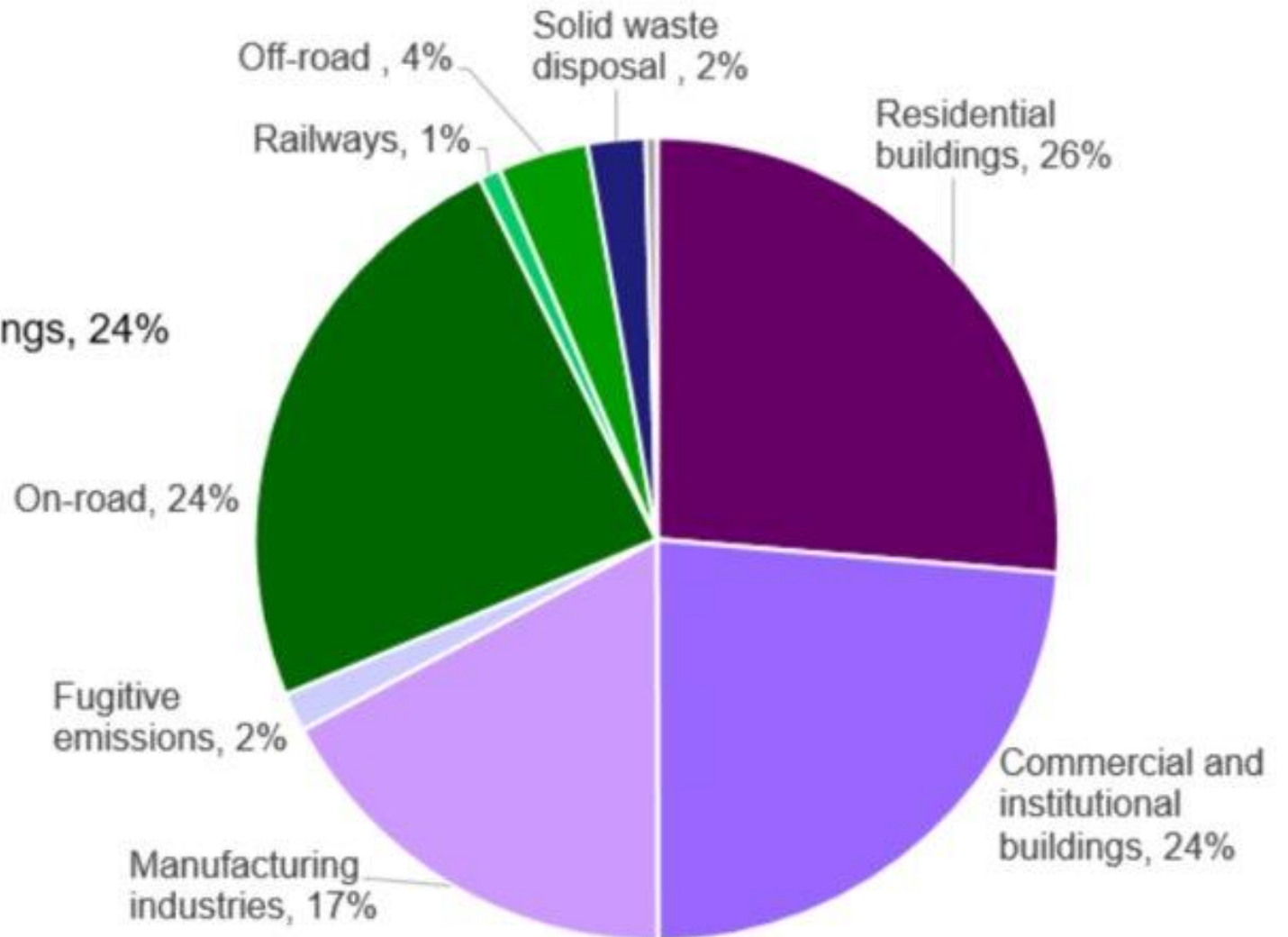


Goal: Reduce GHG 80% by 2050

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

Greenhouse gas emissions by subsector for Chicago region, 2015

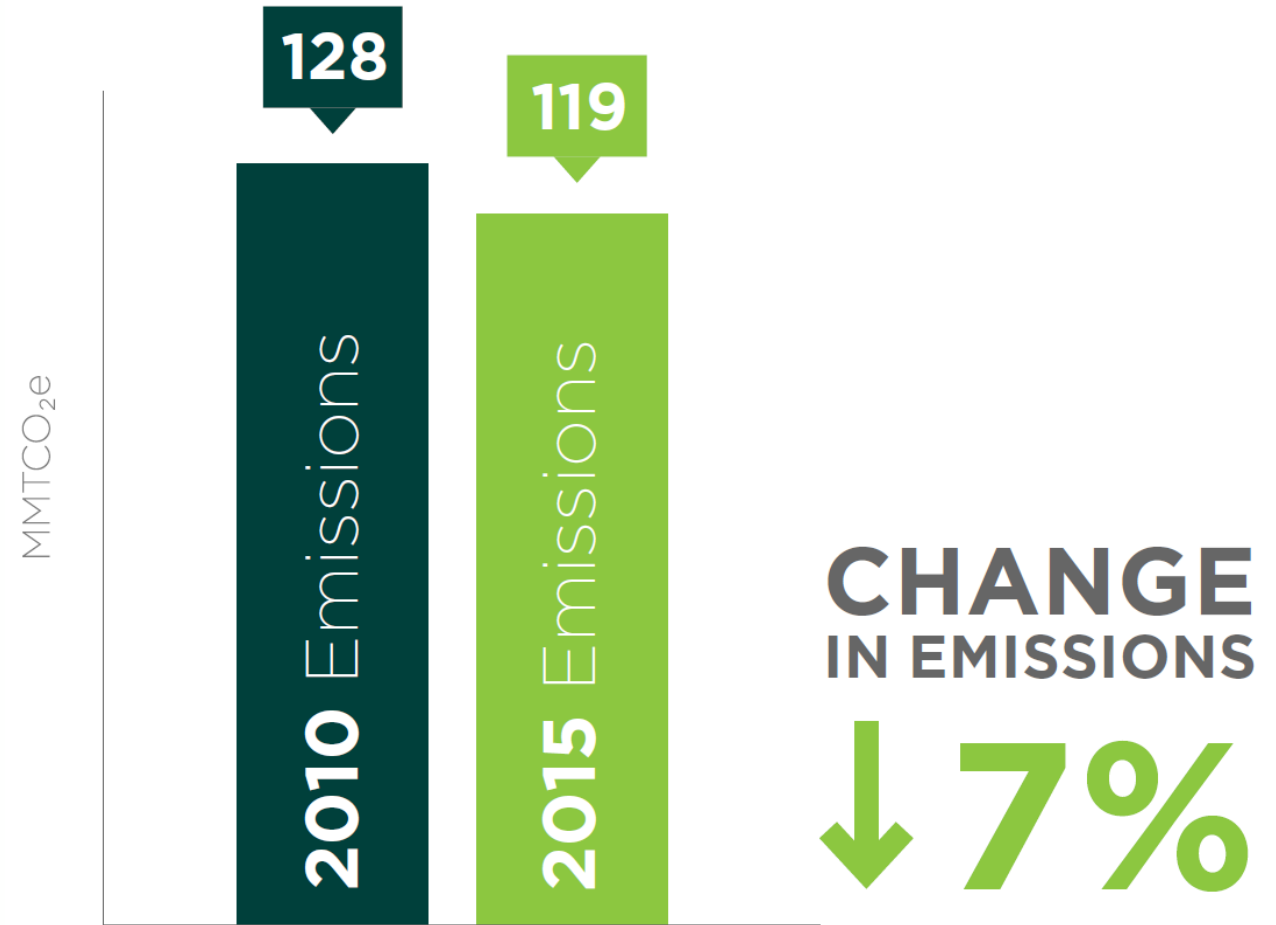
- Residential buildings, 26%
- Commercial and institutional buildings, 24%
- Manufacturing industries, 17%
- Fugitive emissions, 2%
- On-road, 24%
- Railways, 1%
- Off-road, 4%
- Disposal of solid waste, 2%
- Other, 0.43%*





7% reduction 2010-2015
8.5% reduction per capita

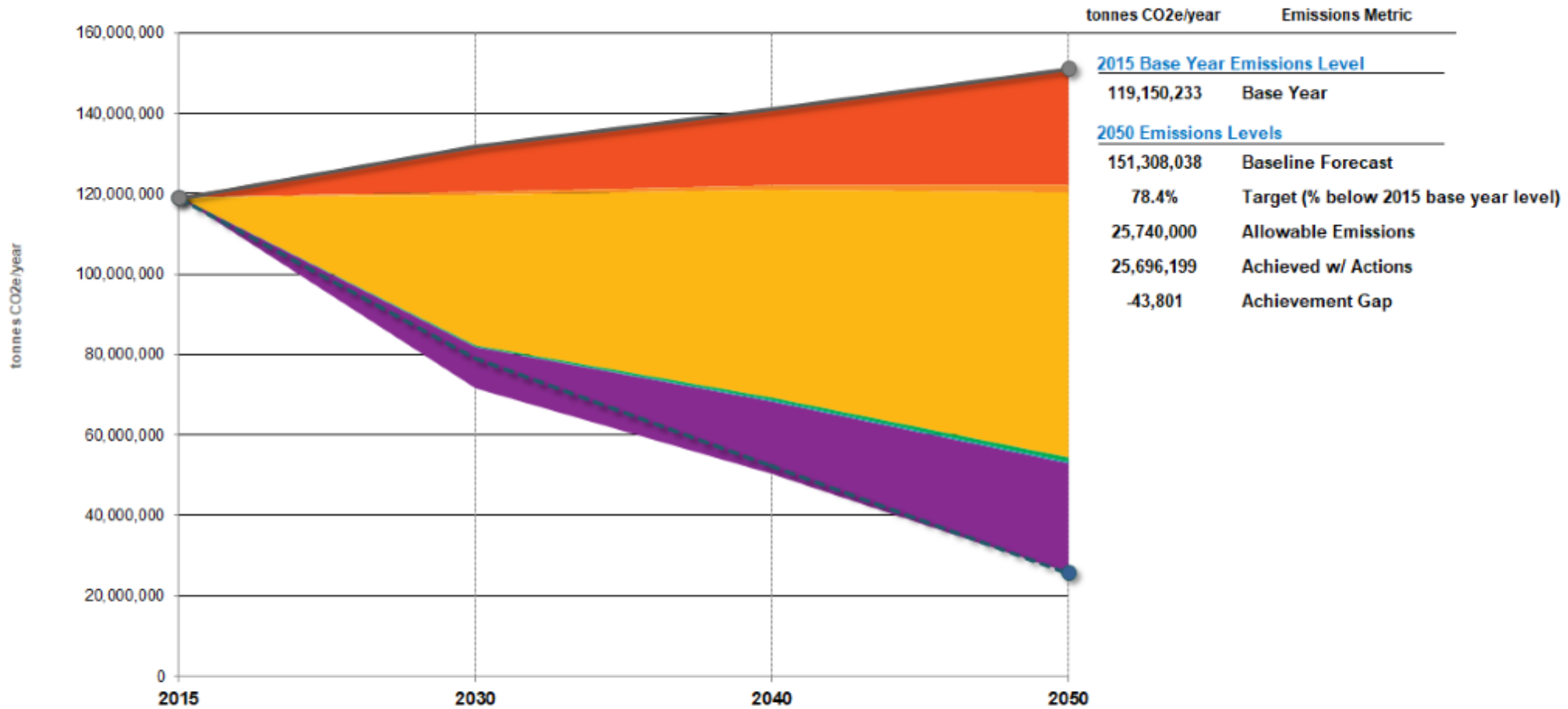
Waste: 50% reduction
Buildings: 8% reduction
Transportation: 1% increase





2050 Target: 78.4%

National/Regional Actions: Show Separately



Legend:

- N National/Regional Actions (All Sectors)
- Private Building Energy
- Municipal Building & Public Lighting
- Electricity Generation
- Baseline Forecast
- Solid Waste
- Wastewater
- Transportation
- Target Trajectory

Step 3 - GHG Reduction Target



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 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



Mitigation Strategies

in plain talk

Use less energy

- More efficient buildings
- Less driving

User cleaner energy

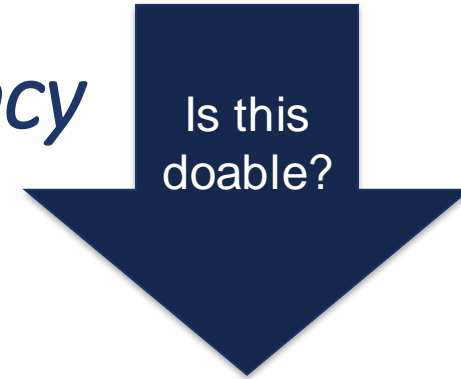
- More wind and solar
- More electric vehicles and buildings

Capture carbon

- Rely on nature



Optimize Building Energy Efficiency



Strategy	Municipal Role	Solution Status	GHG Potential
Efficient water utilities & clean energy to process water	Lead	Proven	Low

- Each strategy also has:
- Equity consideration
 - Lead partners
 - Cost & Time Comittment



Optimize Building Energy Efficiency



Use less energy

Strategy	Municipal Role	Solution Status	GHG Reduction
Retrofit municipal buildings, facilities, and streetlights for maximum efficiency	Lead	Proven	Low
Accelerate building space electrification using renewable energy sources	Encourage	Aspirational	High
Engage residential and commercial property owners to optimize building efficiency.	Encourage	Proven	High



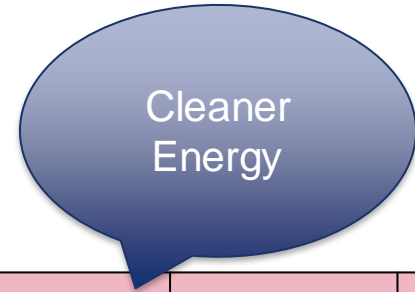
Implement Clean Energy Policies

Less energy +
renewable = clean
energy

Strategy	Municipal Role	Solution Status	GHG Reduction
Support robust building energy codes, benchmarking, and building performance standards	Enact	Evolving	Enabling
Require high performance and net zero new construction	Encourage	Evolving	High
Modernize municipal franchise agreements to leverage investment in clean energy	Enact	Contingent	Enabling
Adapt zoning codes and streamline development processes to accelerate investment in solar	Enact	Proven	Enabling



Decarbonize Energy Sources



Strategy	Municipal Role	Solution Status	GHG Reduction
Build renewable energy and energy storage capacity	Lead, Encourage	High	High
Engage the community in choosing renewable energy through procurement, financing, community solar	Encourage	Enabling	Enabling
Partner with utilities to decarbonize the regional power grid	Encourage	High	High
Explore renewable district energy solutions	Encourage	High	High

Decarbonize Transportation



Strategy	Municipal Role	Solution Status	GHG Reduction
Create an accessible and reliable network of EV chargers	Lead	Evolving	Enabling
Transition municipal fleets to low and zero-emission vehicles and encourage passenger vehicle fuel switching	Lead, Encourage	Evolving	High
Support strong national fuel efficiency standards	Encourage	Proven	High
Enact and enforce anti-idling policies.	Enact	Proven	Low
Adapt utility and local government development processes to accelerate investment in EV charging infrastructure	Enact	Evolving	Enabling



Reduce Vehicle Miles Traveled

Drive less

Strategy	Municipal Role	Solution Status	GHG Reduction
Prioritize transit-oriented development and transit-supportive land uses	Enact	Evolving	High
Collaborate to enhance regional transit and expand capacity	Encourage	Proven	Together high
Plan and design roadways and corridors to benefit all road users and promote active transportation	Enact	Proven	
Build and maintain safe, resilient, and accessible active transportation infrastructure	Lead, Encourage	Proven	
Encourage walking, biking and transit use	Encourage	Proven	
Strategically manage parking policies to promote walking, biking, and public transportation	Lead	Evolving	



Methane & energy

Manage Waste Sustainably

Strategy	Municipal Role	Solution Status	GHG Reduction
Capture fugitive emissions from landfills	Encourage	Proven	Medium
Increase capacity for regional composting and biological treatment of waste	Lead	Proven	Low
Reduce waste generation through reuse & smart behaviors	Encourage	Evolving	Together high
Increase the diversion of recyclable material and organic waste from landfills	Encourage	Proven	



Methane
& energy

Manage Water Sustainably

Strategy	Municipal Role	Solution Status	GHG Reduction
Capture and convert wastewater biogas to energy	Lead, Encourage	Proven	Medium
Optimize the efficient delivery of safe drinking water and wastewater management to reduce energy demands and shift to clean energy sources	Lead	Proven	Low



Demonstrate Leadership in Sustainability

Strategy	Municipal Role	Solution Status	GHG Reduction
Establish local sustainability targets that align with the regional CAP	Enact	Proven	enabling
Sustain a robust and resilient green local economy	Lead	Proven	
Integrate smart technology into operations	Lead	Evolving	
Adopt the Greenest Region Compact and a GRC-based sustainability plan aligned with the regional CAP	Enact	Proven	
Manage operations, purchasing and events sustainably	Enact	Proven	



Sustain Ecosystems to Sequester Carbon

Rely on nature

Strategy	Municipal Role	Solution Status	GHG Reduction
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	High
Protect and restore soil integrity	Enact, Encourage	Evolving	--

Chicago Regional Climate Action Plan (CAP) Overview



Goal: *Lead with Resilience*

Climate Hazards and Impacts:

- Heat and Health;
- Flooding and Homes;
- Flooding and Infrastructure;
- Flooding and Transportation;
- Air Pollution and Health

Equity

Adaptation Objectives

How should we state
our resilience goal?

Suggest a goal in Chat



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

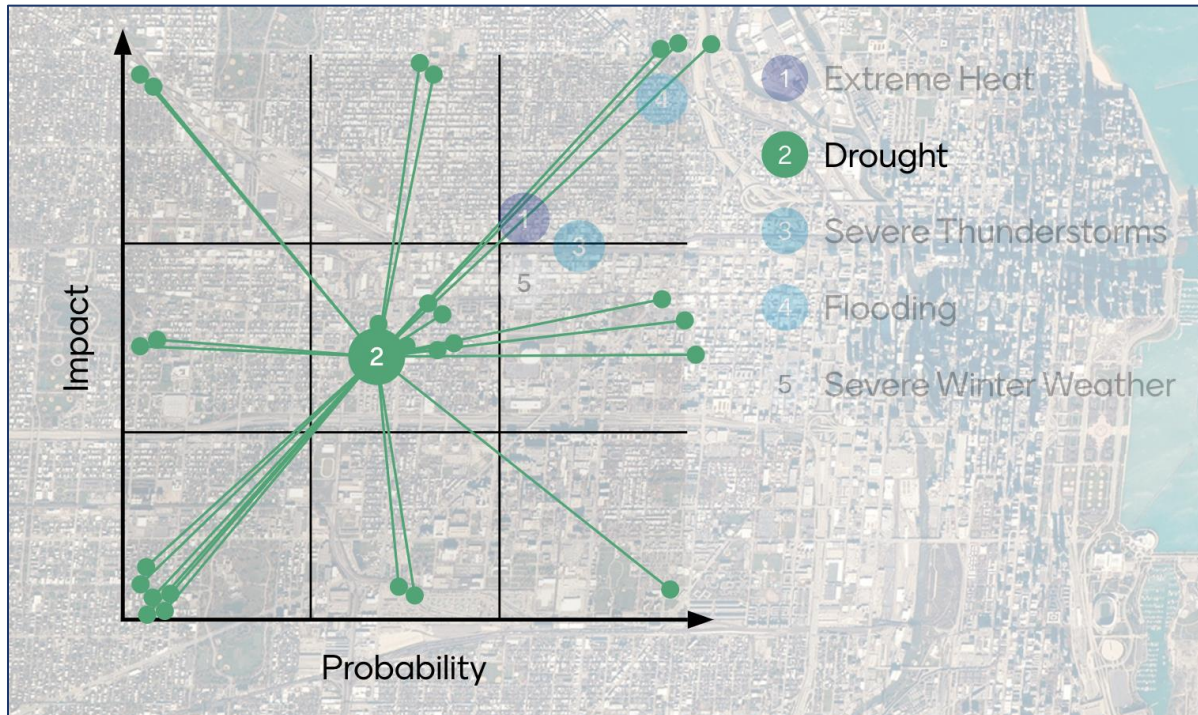
4 Prioritize & Plan

5 Take Action

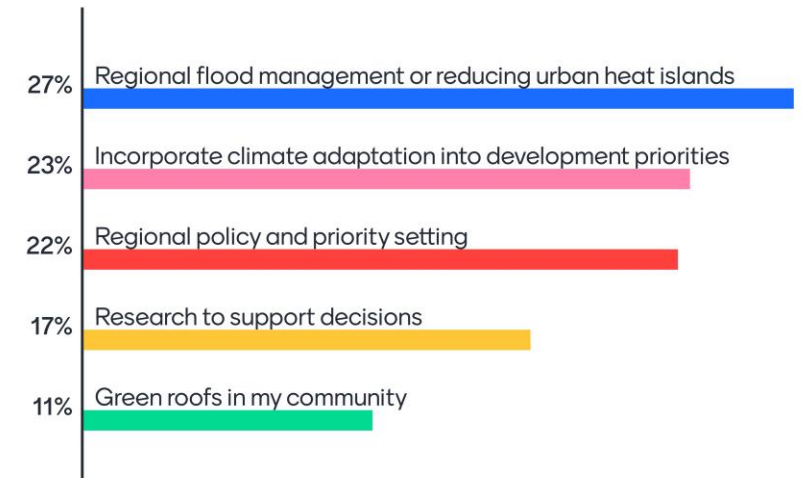
Incorporate
Climate Risk

Traditional
Decision Making

Step 6 - Adaptation Workshops



Where would you invest?





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 about climate resilience and adaptation

Strategy	Municipal Role	Solution Status
about weather hazards and risks. Encourage preparation	Encourage	Proven
about services that support health and wellness	Encourage	Proven
about flood risks and ways to prepare for floods on their property	Encourage	Evolving
Encourage residents and businesses to adopt green infrastructure practices	Encourage	Evolving
Encourage residents and businesses to conserve water	Encourage	Proven



Incorporate equity and inclusion into climate adaptation efforts

Strategy	Municipal Role	Solution Status
Collaborate to ensure residents most vulnerable to heat, air pollution and flooding are connected to emergency relief services.	Lead, Encourage	Evolving
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
Assess local air quality and impacts on vulnerable populations.	Lead, Encourage	Contingent



Collaborate and build capacity for more resilient community

Strategy	Municipal Role	Solution Status
Coordinate resiliency efforts with federal, state and regional planning agencies.	Lead, Encourage	Evolving
Access and share timely weather data	Lead	Proven
Develop an emergency transportation and logistics plan to move vital resources	Lead, Encourage	Evolving
Manage urban heat islands	Encourage	Evolving



Collaborate and build capacity for more resilient community resources

Strategy	Municipal Role	Solution Status
Manage public and private landscapes to optimize ecosystem services and support biodiversity	Encourage	Proven
Collaborate to sustainably manage regional water supply	Lead, Encourage	Evolving
Monitor and protect water quality in private wells	Encourage	Proven
Collaborate to sustainably manage stormwater	Encourage	Evolving



Enact plans and policies focused on adaptation and resilience

Strategy	Municipal Role	Solution Status
Conduct climate vulnerability assess climate vulnerability and risks to local infrastructure.	Lead	Evolving
Proactively update codes to reflect evolving climate conditions.	Enact	Evolving
Reduce sprawl by promoting infill development.	Enact, Encourage	Proven
Promote connected and walkable neighborhoods.	Enact, Encourage	Evolving



Enact plans and policies focused on adaptation and resilience of water resources

Strategy	Municipal Role	Solution Status
Participate in the Community Rating System and National Flood Insurance Program	Lead, Enact	Proven
Enhance wetlands and natural features of stormwater detention and retention systems.	Enact, Encourage	Proven
Incentive overhead basement sewer conversion.	Encourage	Proven
Adopt a water conservation plan.	Enact	Proven



Enact plans and policies focused on adaptation and resilience of landscapes

Strategy	Municipal Role	Solution Status
Optimize tree planting and protect existing trees for maximum shading and stormwater benefits.	Lead, Encourage, Enact	Proven
Guide future development to conserve land and ecosystems services.	Enact, Encourage	Evolving



Adapt operations and investments for future climate conditions

Strategy	Municipal Role	Solution Status
Strengthen emergency and adaptive response skills among staff, civic leaders, and allied organizations.	Lead	Proven
Enhance parks, open space, and recreational opportunities accessible to all residents	Lead, Encourage	Proven
Establish green infrastructure and include maintenance in capital improvement plans.	Lead, Encourage	Proven
Operate an efficient water utility that delivers clean, healthful, water	Lead	Proven



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Edith Makra emakra@mayorscaucus.org

Jared Patton jpatton@cmapp.illinois.gov