CLIMATE ACTION PLAN
FOR THE CHICAGO REGION

2021

SUMMARY DOCUMENT

Metropolitan Mayors Caucus | NOAA

MMC NOAA

This document is a condensed version of the 2021 Climate Action Plan for the Chicago Region.
The full plan can be viewed at: https://mayorscaucus.org/climate-change/

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SUMMARY DOCUMENT

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Climate Action Plan for the Chicago Region

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Aerial view of Will County. Image credit: CMAP

EXECUTIVE SUMMARY

Climate Action Plan for the Chicago Region

We have begun the ***decisive decade***: climate action must reduce greenhouse gas emissions, and we must adapt equitably to changes that are inevitable. This plan for the Chicago metropolitan region—one of the first regional climate plans in the United States—is our call to action. We will address global and local climate challenges via municipal leadership.

Over a 16-month period, beginning in August 2019, **the Caucus brought together 270 people from 175 organizations, including representatives of 53 municipalities and counties**. Three workshops demonstrated how the Greenest Region Compact (GRC) can help municipalities reduce greenhouse gas (GHG) emissions. Four workshops focused on identifying and adapting to regionally important climate-related hazards, especially flooding and heat, using the U.S. Climate Resilience Toolkit's *Steps to Resilience*[3] and while centering actions on social equity. As a result of these engagements, **the GRC has augmented its library of municipal-scale actions for both climate mitigation and adaptation**.

The strategies contained in this plan are specifically tailored for action at the municipal scale. Municipal governments are uniquely positioned to **lead**, **enact** policies, and **encourage** others to take action. These three roles are prominent throughout the plan because they reflect actions that municipalities can take independently. The Caucus will work with its membership, starting with its 136 GRC signatories, to immediately undertake these common sense strategies so that, **collectively, we may address the depth and complexity of the climate crisis**.

A multi-jurisdictional approach is needed for addressing the climate crisis. Each community must link its work to that of others to address the regional and global scope of the global climate challenge. If one municipality reduces GHG emissions but the larger region makes no progress, climate change and its related impacts will accelerate. The same can be said at broader scales. If Chicagoland reaches net zero emissions but the state and nation take no action, the climate crisis will worsen. **This plan positions us as leaders in the national effort to mitigate that crisis**.

Climate adaptation also requires coordination. Building resilience must address social inequity to meet our shared objectives across all communities. **Municipalities must urgently coordinate action to both mitigate and adapt to climate change**.

Our region begins its mitigation efforts with a clean energy advantage, but **we must swiftly complete the transition to 100% clean energy sources. The greatest opportunities to reduce GHG emissions come from electrifying transportation, optimizing building energy, and enacting clean energy policies.**

Fostering healthy ecosystems to capture and store carbon will enhance quality of life, recreation, flood protection, and a multitude of other benefits. **Mitigation and adaptation go hand-in-hand**.

Planners, scientists, and engagement with GRC signatories spotlighted **six high-priority climate hazards and their potential impacts to people, assets, and resources**: **Heat and Health; Flooding and Homes; Flooding and Infrastructure; Flooding and Transportation; Drought and Water Supply; and Air Quality, Flooding, and Public Health**.

This plan identifies particular municipal strengths in community engagement and collaboration to address hazards for equitable outcomes. Overarching actions to confidently build community resilience, such as local assessment and planning, require cooperation across the region. The impacts and strategies in this plan are important, but **building resilience is an iterative process that will require sustained effort** given the fact that the climate system will continue to vary (for natural reasons) and to change (due to past decisions).

Municipal leaders may now take strategic actions to build cohesive, resilient communities and meet urgent targets to halt greenhouse gas emissions. Strategies are anchored in the Greenest Region Compact, informed by dozens of preceding climate action plans and tools, and ultimately aligned with global targets through the powerful Global Covenant of Mayors for Climate and Energy.

3 *NOAA. U.S. Climate Resilience Toolkit. 2018. https://toolkit.climate.gov/#steps. Accessed February 2021.*

The Climate Action Plan for the Chicago Region encompasses two goals, each with its own interim targets and objectives, to reduce future impacts and adapt to a changing climate: **(1) net zero GHG emissions** and **(2) persistent, equitable climate adaptation.**

CLIMATE MITIGATION GOAL
Net zero greenhouse gas emissions

INTERIM TARGETS

2030 Reduce GHG emissions 50% from 2005 levels

2040 Reduce GHG emissions 65% from 2005 levels

2050 Reduce GHG emissions at least 80% from 2005 levels

MITIGATION OBJECTIVES

1. Demonstrate leadership to reduce emissions.
2. Decarbonize energy sources.
3. Optimize building energy.
4. Implement clean energy policies.
5. Decarbonize transportation.
6. Reduce vehicle miles traveled.
7. Manage water and waste sustainably.
8. Sustain ecosystems to sequester carbon.

CLIMATE ADAPTATION GOAL
Persistent, equitable climate adaptation

INTERIM TARGETS

2030 Climate-resilient governance

2040 Resilience across jurisdictions

2050 Cohesive, resilient communities

ADAPTATION OBJECTIVES

1. Engage and educate the community about climate resilience 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 resilience.
5. Adapt operations and investments for future climate conditions.

HOW TO USE THIS PLAN

This Climate Action Plan identifies common objectives for regional stakeholders to consider, though strategies are scaled for municipal action.

The regional GHG inventory and emissions models are likely of great value to municipal leaders embarking on local climate action. This assessment will help local leaders prioritize actions related to building and transportation energy, the two greatest sources of GHG emissions. Individual communities need not undertake their own local GHG inventories to exercise their authority and influence to help the region mitigate climate change.

Proposed mitigation solutions necessarily span a wide range—from actions that are relatively simple and affordable, like making buildings energy efficient, to actions that are complex and formidable, like district energy systems. Municipalities may **lead** by demonstrating low-carbon operations and choices within their own operations. Municipalities may **enact** policies, like streamlining solar codes and processes that accelerate the transition to clean energy, or they may **encourage** others to reduce GHG emissions with investments and behaviors, like creating paths and infrastructure that encourage people to walk or bike instead of drive. Mitigation strategies are framed for municipalities to effect change using these three primary levers, when they can.

The value in the regional climate risk and vulnerability assessment is to focus actions to protect people, places, and things that are increasingly in harm's way given a changing climate. Through diverse stakeholder input, this plan prioritizes climate hazards and impacts threatening communities in the region, primarily heat and flooding. The plan's adaptation objectives leverage municipal strengths and authorities and underscore the importance of equity. It presents strategies that municipalities can take independently and in the near term to begin adapting to climate change. It does not, however, provide a ranked set of priorities for each of the 284 municipalities in the region. In an ideal world, adaptation would ensue from each local government taking the *Steps to Resilience*[27] to understand its own climate-related exposure, vulnerability, and risk. We recognize that resources for such an effort may not be available in all communities. Nonetheless, each government will need to prioritize its own concerns prior to planning and taking adaptation actions that may require substantial resources in their own right.

The mitigation and adaptation strategies proposed in this plan are not exhaustive, but they do reflect priority actions that will effectively support adaptation and mitigation goals in the short term and using ideas that have been tested elsewhere. Strategies dovetail with Greenest Region Compact goals and should inform local sustainability plans. They are anchored in the region's comprehensive plan, ON TO 2050, and build on that plan's recommendations around community, prosperity, environment, governance, and mobility.

The mitigation and adaptation strategies proposed in this plan are not exhaustive, but they do reflect priority actions that will effectively support adaptation and mitigation goals in the short term and using ideas that have been tested elsewhere.

LEAD

Municipalities take actions within their own operations and decisions.

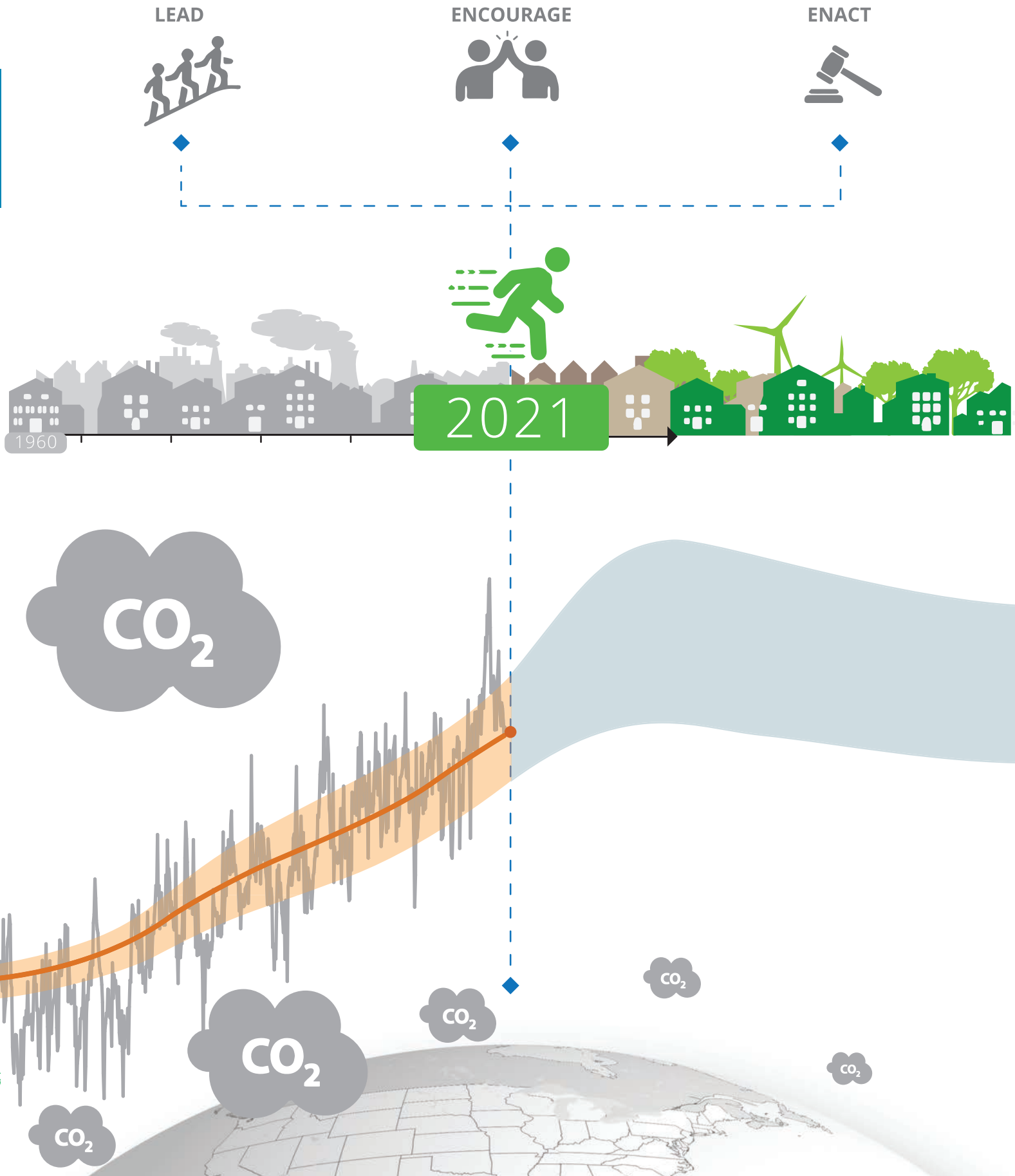
ENCOURAGE

Influence constituents and partners to change behaviors or take action through education, collaboration, direct investment, and incentives.

ENACT

Municipalities enact policies or support other jurisdictions in enacting policies.

27 *Op. cit. https://toolkit.climate.gov/#steps. Accessed February 2021.*


LEAD
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MITIGATION OBJECTIVES AND STRATEGIES

DEMONSTRATE LEADERSHIP TO REDUCE EMISSIONS

Direct emission reductions are not possible without local leadership, public engagement and the supportive actions of local government. This objective supports all other mitigation objectives in reaching the overall GHG reduction target. Municipalities must lead in sustainability planning by engaging residents and articulating a shared vision and plan. Municipal operations can be smart and sustainable by conserving energy and resources.

LEAD

- Build and support a resilient local economy that supports climate objectives.
- Integrate smart technology into operations to effectively manage resource consumption (also *Encourage* others to do so).
- Demonstrate sustainability in municipal operations, purchasing and through public events.

ENACT

- Adopt the Greenest Region Compact and a GRC-based sustainability plan aligned with regional climate objectives.
- Establish local sustainability targets that support the regional climate objectives.

EQUITY CONSIDERATIONS

- Engage diverse civic leaders in target-setting and implementation.
- Tailor plans to benefit vulnerable communities.

OUTCOMES & CO-BENEFITS

- Leading by example inspires followers and cooperation across sectors.
- Alignment of local energy, water conservation, and waste reduction targets.
- Effective local plans guide action.
- Collaborative and accelerated GHG reduction.
- Local green jobs and sustainable businesses.
- Informed and engaged constituents.
- 'Smart' operations perform better.

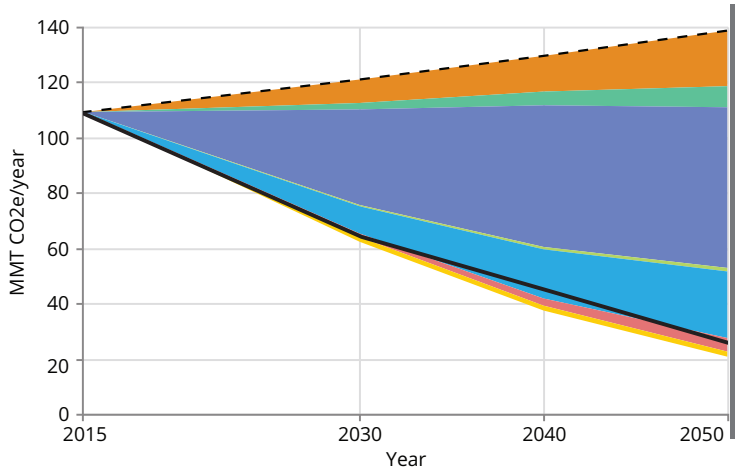
GRC2 Greenest Region Compact

COLLABORATING FOR SUSTAINABLE COMMUNITIES

Four counties and 132 municipalities support consensus sustainability goals within the Greenest Region Compact (GRC) to guide action and citizen engagement. With this plan, the GRC will now address the climate crisis.

1. DEMONSTRATE **LEADERSHIP TO REDUCE EMISSIONS**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Establish local sustainability targets that support regional climate objectives.	ENACT	Proven	Enabling	¢	Med	Constituents, nonprofits	Engage diverse civic leaders in target-setting and implementation.	Local energy, water conservation, and waste reduction targets aligned; collaborative and accelerated GHG reduction
b	Build and support a resilient local economy that supports climate objectives.	LEAD	Proven		$$	High	Economic development organizations, businesses, academia	Provide access to green jobs; preserve local retail and services in disadvantaged communities.	Local green jobs and sustainable businesses; local production and consumption; reduced transportation costs
c	Integrate smart technology into operations to effectively manage resource consumption.	LEAD ENCOURAGE	Evolving		$$$	High	Gas and electric utilities, tech industry, EMAs, transit agencies	Prioritize smart technology investments in vulnerable communities.	Improved operational performance through 'smart' technology
d	Adopt the Greenest Region Compact and a GRC-based sustainability plan aligned with the regional climate objectives.	ENACT	Proven		$	Med	MMC, StR, nonprofits	Tailor plans to the needs of vulnerable communities	Local plans guide effective action
e	Demonstrate sustainability in municipal operations, purchasing, and through public events.	LEAD	Proven		$	High	Constituents, COGs, vendors	Prioritize small and minority-owned vendors.	Leading by example inspires followers and cooperation across sectors; informed and engaged constituents



MUNICIPAL ROLES IN CLIMATE ACTION

LEAD:
municipalities take actions within their own operations and decisions

ENCOURAGE:
influence constituents and partners to change behaviors or take action through education collaboration, direct investment and incentives

ENACT:
municipalities enact policies or support other jurisdictions in enacting policies

DECARBONIZE **ENERGY SOURCES**

Switching from fossil-fuel to cleaner sources to generate energy presents the greatest opportunity to meet our GHG reduction target. While 80% of energy generated regionally is already clean, this continued transition must include large utility-scale solar, wind, and nuclear power generation systems, and infrastructure to transmit, store and supply electricity to the grid when needed. The transition must be affordable for all consumers and support reliability. Smaller distributed energy resources, like rooftop solar, provide clean energy close to where they are used. District energy systems connect multiple buildings to highly efficient sources of heating and cooling energy.

LEAD

- Procure clean energy for municipal operations
- Build renewable energy and energy storage capacity to meet the clean energy needs of the region

ENCOURAGE

- Engage the community and policymakers to support existing clean energy and choose renewable clean energy through procurement, aggregation, financing, community solar, and other collaborative programs
- Partner with utilities to complete the decarbonization of the local grid and collaborate to decarbonize the multi-state regional grid
- Explore renewable district energy solutions

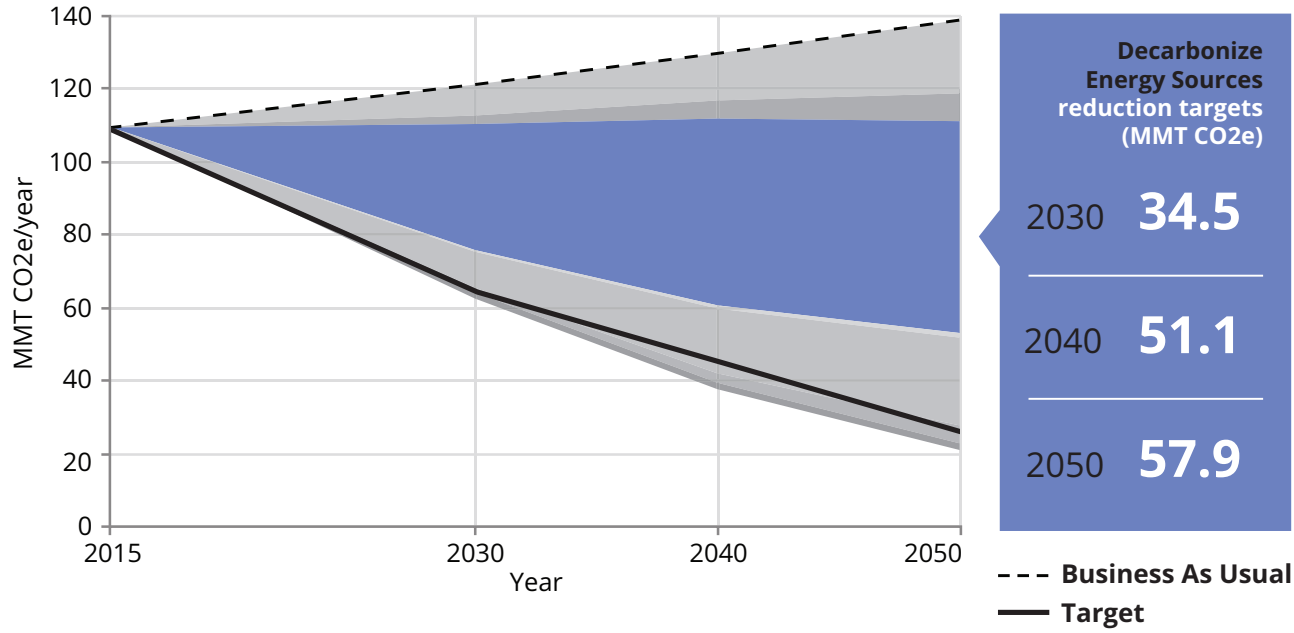
See also: Implement Clean Energy Policies

EQUITY CONSIDERATIONS

- Replace fossil fuel-fired power to improve air quality
- Demonstrate long-term utility cost savings
- Make clean energy options available to low-income households through incentives and collaborative procurement

OUTCOMES & CO-BENEFITS

- Thriving renewable energy industry
- Modern, efficient electric grid
- Resilient energy systems
- Informed clean energy consumers
- Reduce long-term costs



2. DECARBONIZE **ENERGY SOURCES**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Procure clean energy for municipal operations. Build renewable energy and energy storage capacity.	 LEAD	Evolving	High	$$$	High	Clean energy industry, property owners, investors	Prioritize access to clean energy jobs in disadvantaged communities.	Modernized, efficient electric grid; resilient distributed generation; thriving renewable energy industry; reduced long-term utility costs; create clean energy jobs
b	Engage the community to choose clean energy through procurement, aggregation, financing, community solar, and other collaborative programs	 ENCOURAGE	Evolving	Enabling	$	Low	Clean energy industry, nonprofits, electric utility, regulators	Provide access to affordable, clean energy.	Expanded market demand for clean energy; informed energy consumers
c	Partner with utilities to complete decarbonization of the local grid, collaborate to decarbonize the multi-state regional grid	 ENCOURAGE	Aspirational	High	$$$	High	Electric utility, investors, regulators, clean energy industry	Replace coal-fired and gas-fired power to improve air quality. Support clean energy jobs training for displaced fossil fuel workers.	Elimination of fossil-fuel generated electricity; utility-scale solar, wind, and nuclear power generation
d	Explore renewable district energy solutions	 ENCOURAGE	Aspirational	High	$$$	High	Clean energy industry, utilities, developers, property owners	Reduce long-term energy burden.	Increased resilience and efficiency, reduced long-term costs

OPTIMIZE BUILDING **ENERGY**

Energy used for heating and cooling buildings is currently the largest source of regional GHG emissions. Operational and behavioral changes and more efficient equipment can reduce energy use. Growing numbers of policy and finance mechanisms support increased energy efficiency investments. Options to power buildings with zero-carbon energy sources, generate and store renewable energy are technically accessible to building owners. Electrifying heating, cooling, cooking and other operations allows emissions from the building sector to fall as the energy grid decarbonizes.

LEAD

- Retrofit municipal buildings, facilities, and streetlights for maximum efficiency.

ENCOURAGE

- Support electric space and water heating through demonstration, education, and incentives.
- Engage residential and commercial property owners to optimize building efficiency. Leverage programs such as demand response, energy efficiency incentives, and PACE financing.

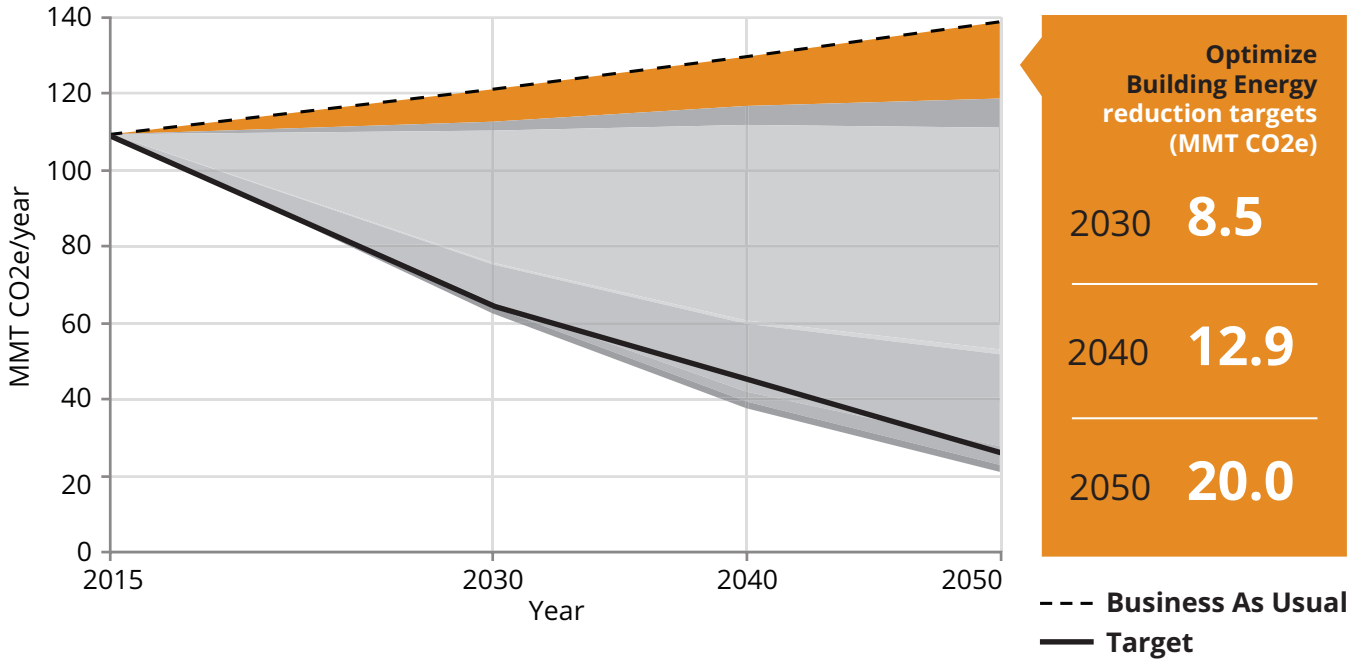
See also: Implement Clean Energy Policies

EQUITY CONSIDERATIONS

- Invest in multi-family housing
- Reduce household energy burden
- Make homes safer, and more comfortable

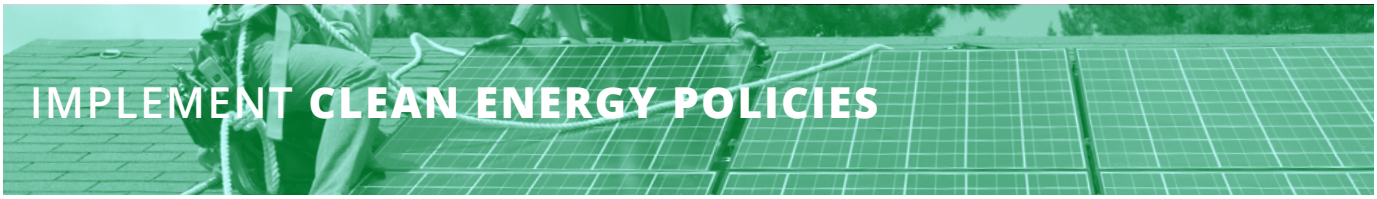
OUTCOMES & CO-BENEFITS

- Reduce energy costs
- Improve building performance
- Improve heating and cooling
- Improve indoor air quality
- Create clean energy jobs



3. OPTIMIZE BUILDING **ENERGY**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Retrofit municipal buildings, facilities, and streetlights for maximum efficiency.	 LEAD	Proven	Low	$$	Low	Electric and gas utilities, clean energy industry	Prioritize access to clean energy jobs in disadvantaged communities.	Reduced energy costs; improved building performance; resilient facilities
b	Support electric space and water heating through demonstration and education.	 ENCOURAGE	Aspirational	High	$$$	Med	Electric and gas utilities, building owners	Invest in areas vulnerable to poor indoor air quality.	Improved indoor air quality; increases impact of grid decarbonization
c	Engage residential and commercial property owners to optimize building efficiency. Leverage programs such as demand response, energy efficiency, and PACE financing.	 ENCOURAGE	Proven	High	$	Low	Homeowners, CAAs, building owners, electric and gas utilities, clean energy industry, IECA, nonprofits	Invest in multi-family housing; reduce household energy burden. Provide energy savings information in all languages and formats.	Reduced energy costs; reduced peak demand; improved building performance; leveraged private investment; resilient buildings; safe and comfortable homes



IMPLEMENT **CLEAN ENERGY POLICIES**

Policies that promote building efficiency and support renewable energy can reduce GHG emissions over the long term. Local governments can set and support clean energy policies, though policies that are aligned with local, state and federal levels are most impactful. When possible, buildings should be net zero, generating at least as much renewable energy as the building efficiently consumes.

ENACT

- Support robust building energy conservation codes, benchmarking, and building performance standards to optimize energy efficiency for retrofit projects
- Require high performance, all-electric, and net zero new building construction
- Modernize municipal franchise agreements to leverage investment in clean energy and reduce costs to residents
- Adapt zoning codes and streamline development processes to accelerate investment in solar and other renewable energy systems

ENCOURAGE

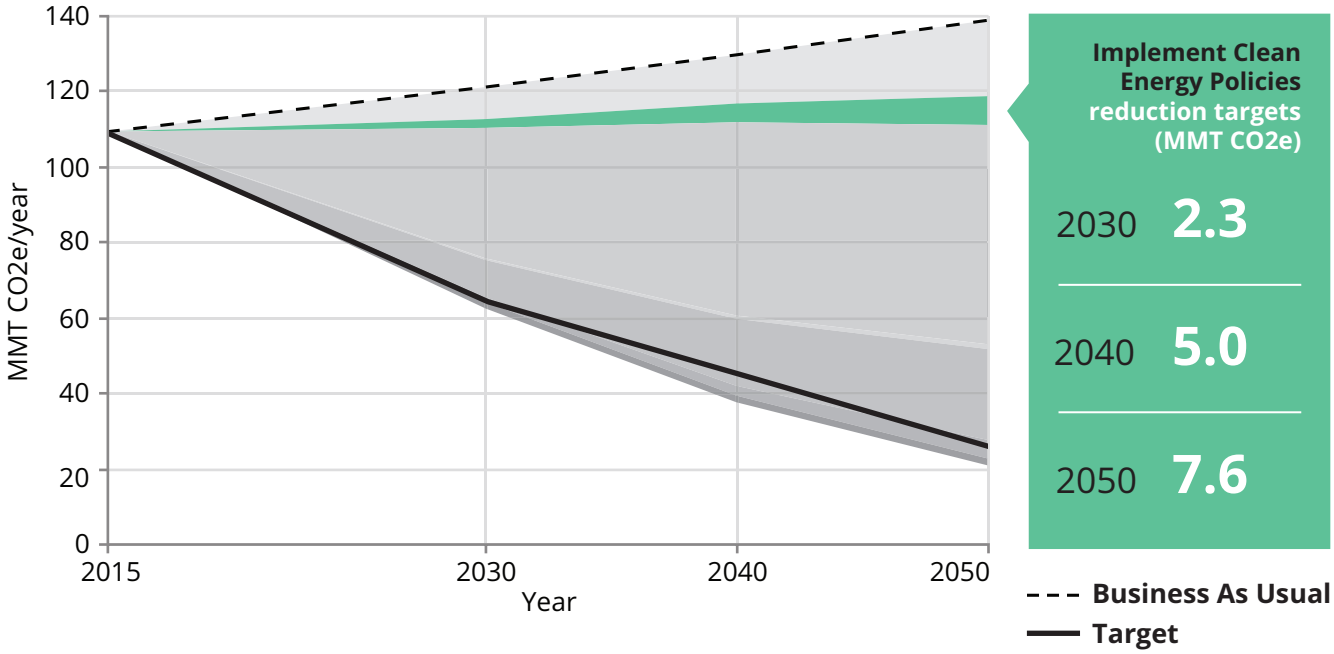
- Support state and federal policies to advance clean energy

EQUITY CONSIDERATIONS

- Ensure benefits are shared equitably
- Reduce long term energy burden
- Eliminate utility franchise cost to residents
- Make rooftop solar more accessible by reducing soft costs
- Support retrofits and code compliance for low-income property owners

OUTCOMES & CO-BENEFITS

- Reduce energy and water costs
- Improve long-term building performance
- Leverage private investment in buildings
- Demonstrate technology and design to achieve net-zero
- Create operational resilience
- Create clean energy jobs



4. IMPLEMENT **CLEAN ENERGY POLICIES**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Support robust building energy conservation codes, benchmarking, and building performance standards to optimize energy efficiency for retrofit projects.	 ENACT	Evolving	Enabling	$	Med	ICC, IGA	Reduce long-term energy burden. Support retrofits and code compliance for low-income property owners.	Reduced energy and water costs; improved long-term building performance; operational resilience; leveraged private investment; demonstration of technology and design to achieve net-zero
b	Require high performance, all-electric, and net zero new building construction.	 ENACT	Evolving	High	$$$	High	Developers, building owners, clean energy industry, gas and electric utilities		
c	Modernize municipal franchise agreements to leverage investment in clean energy and reduce costs to residents.	 ENACT	Contingent	Enabling	$$$	Med High	Gas and electric utilities	Eliminate franchise cost to residents.	Investment in public facilities enabled
d	Adapt zoning codes and streamline development processes to accelerate investment in solar and other renewable energy systems.	 ENACT	Proven	Enabling	$	Med	Clean energy industry, MMC	Make rooftop solar more accessible by reducing soft costs.	Accelerated investment in solar; more affordable, safe and effective renewable energy systems; grid dependency lessened
e	Support state policies to advance clean energy	 ENCOURAGE	Evolving	Enabling	¢	Low	ICC, IGA	Assure clean energy investments benefit vulnerable communities	Thriving clean energy industry

DECARBONIZE **TRANSPORTATION**

Vehicles used for transportation and freight are a major source of emissions in the region. Switching to electric vehicles (EVs) and improving fuel efficiency reduces these emissions significantly. Converting high-mileage transit and fleet vehicles to cleaner EVs can drive market demand for EVs and accelerate broad adoption in other vehicle markets. New networks of accessible EV charging infrastructure must support this expansion.

LEAD

- Create accessible and reliable networks of electric vehicle chargers
- Transition fleets to low- and zero-emission vehicles

ENCOURAGE

- Support strong national fuel efficiency standards
- Encourage other public and private fleet operators to switch to low- and zero-emission vehicles
- Encourage residents to transition to electric vehicles through policies and infrastructure investment

ENACT

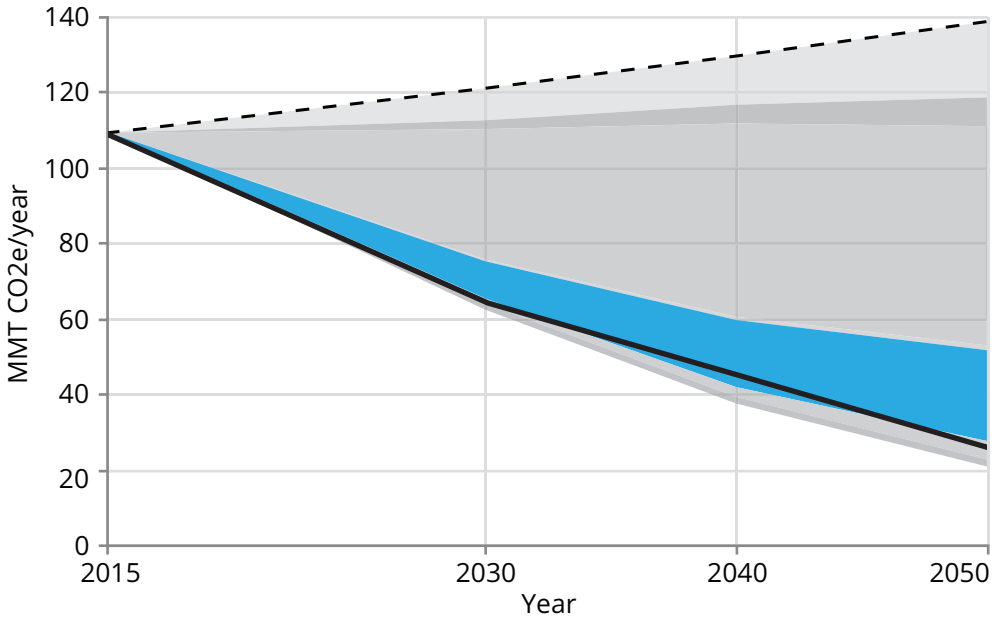
- Enact and enforce anti-idling policies
- Adapt development processes to accelerate investment in EV charging infrastructure

EQUITY CONSIDERATIONS

- Support access to clean transportation for all
- Invest in EV charging for multi-family dwellings
- Reduce health impacts from tailpipe emissions
- Reduce long-term fuel costs

OUTCOMES & CO-BENEFITS

- Reduce tailpipe emissions and pollution
- Clean, quiet transit and service vehicles
- Reduce fuel cost over the long-term
- Reduce soft costs of installing EV charging
- Accelerate private investment in EVs and EV charging infrastructure
- Build safe and effective EV charging networks
- Create clean energy jobs



Decarbonize Transportation reduction targets (MMT CO2e)

2030 **9.8**

2040 **17.7**

2050 **24.0**

Business As Usual

Target

5. DECARBONIZE **TRANSPORTATION**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Create accessible and reliable networks of electric vehicle (EV) chargers.		Evolving	Enabling	$$	High	IEPA, IDOT, CMAP, electric utility, EV industry, employers, property owners, businesses	Provide access to clean transportation for all, focus on EV infrastructure for workplace and multi-family dwellings; protect vulnerable residents from tailpipe emissions.	Electric vehicles displace internal combustion vehicles
b	Transition fleets to low- and zero-emission vehicles and encourage others to do so. Encourage the switch to electric passenger vehicles.		Evolving	High	$$$	Med High	IEPA, CTA, Pace, Metra, school districts, public and private fleet operators, nonprofits		Clean, quiet transit and service vehicles; reduced long-term fuel costs; reduced tailpipe emissions
c	Support strong national fuel efficiency standards.		Proven	High	¢	Low	Federal government		Reduced health impacts of tailpipe emissions
d	Enact and enforce anti-idling policies.		Proven	Low	$	Low	School districts, transit agencies, institutions and venues		
e	Adapt development processes to accelerate investment in EV charging infrastructure.		Evolving	Enabling	$	Med	IDOT, electric utility, EV industry, MMC		Accelerated investment in EV charging infrastructure; reduced soft costs; safe and effective EV charging systems

REDUCE VEHICLE MILES TRAVELED

Whenever possible, walking, biking and public transit should replace trips made using single occupancy vehicles (SOVs). To encourage sustainable transportation choices, safe, accessible infrastructure like bike lanes, sidewalks, and multi-use paths are needed. Development anchored by access to transit, and collaboration to support robust transit service will reduce dependence on SOVs for the long-term.

LEAD

- Build and maintain safe, resilient, and accessible active transportation infrastructure (also *Encourage* others to do so)

ENCOURAGE

- Collaborate to enhance regional transit and expand capacity
- Encourage walking, biking and transit use through education, incentives, and collaboration

ENACT

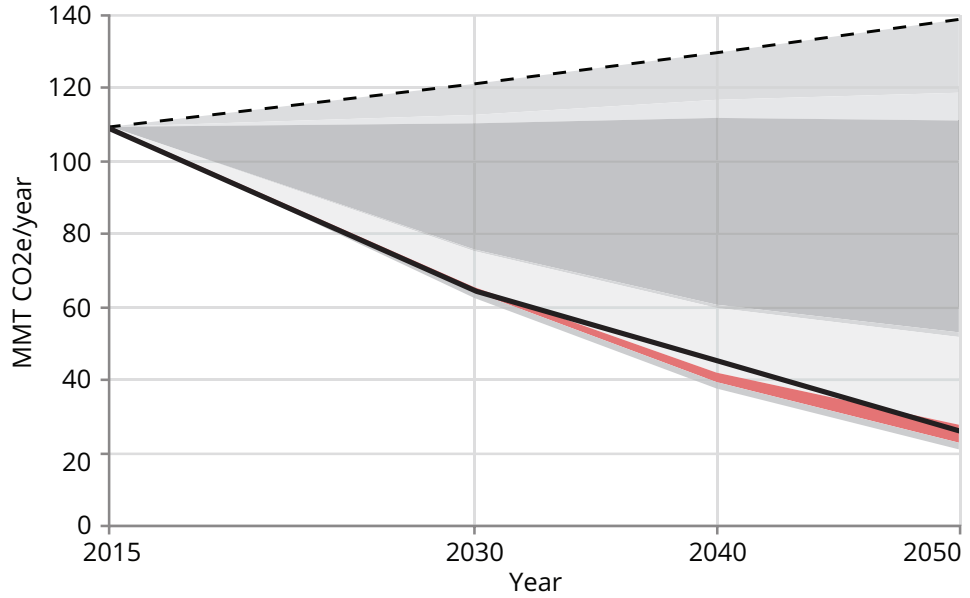
- Prioritize transit-oriented and transit-supportive development and curtail sprawl
- Plan and design roadways and corridors to benefit all road users and promote active transportation
- Strategically manage parking policies to promote active and public transportation
- Promote multi-family housing development near transit stations and along transit routes

EQUITY CONSIDERATIONS

- Focus on safe and accessible transportation for vulnerable communities
- Reduce burden of owning and maintaining personal vehicles
- Better health outcomes
- Greater mobility to improve access to opportunity

OUTCOMES & CO-BENEFITS

- Development of more compact, accessible neighborhoods
- More walking and biking strengthens community cohesion
- Improve health and wellness
- Reduce infrastructure needed to support SOVs
- Reduce traffic congestion
- Improve air quality



Reduce Vehicle Miles Traveled reduction targets (MMT CO2e)

2030	1.3
2040	2.6
2050	4.9

Business As Usual

Target

6. REDUCE VEHICLE MILES TRAVELED

	Strategy	Municipal Role	Solution Status	GHG Reduction Potential	Cost	Effort Required	Lead Partners & Resources	Achieve Equity	Outcomes (Co-benefits)
a	Prioritize transit-oriented development and transit-supportive development.	 ENACT	Evolving	High	$$	High	RTA, CMAP, developers, property owners, economic development organizations	Focus on safe and accessible transportation for vulnerable communities.	Development of more compact, accessible neighborhoods; community cohesion strengthened; burden of owning and maintaining personal vehicle lessened
b	Promote multi-family housing development near transit stations and along transit routes.	 ENACT	Proven		$	Med			
c	Collaborate to enhance regional transit and expand capacity.	 ENCOURAGE	Proven	Combined High	$$$	High	CTA, RTA, Pace, Metra		Reduced traffic congestion; improved air quality; improved access to economic opportunity through greater mobility
d	Plan and design roadways and corridors to benefit all road users and promote active transportation.	 ENACT	Proven		$$	High	IDOT, RTA, counties	Provide safe and accessible transportation for all.	Safe active transportation; connected communities; reduced tailpipe emissions; improved health and wellness; reduced infrastructure demands for personal vehicles
e	Build and maintain safe, resilient, and accessible active transportation infrastructure.	 LEAD ENCOURAGE	Proven		$$	High	IDOT, counties, forest preserve districts, park districts, nonprofits, COGs	Target disadvantaged communities for investment and education.	
f	Encourage walking, biking and transit use through education, incentives, and collaboration.	 ENCOURAGE	Proven		$	Low	School districts, nonprofits, employers, local businesses, institutions, CTA, RTA, Metra, Pace		
g	Strategically manage parking policies to promote active and public transportation.	 ENACT	Evolving		$	Med	Local businesses, economic development organizations, CTA, RTA, Metra, Pace	Provide safe and accessible transportation for all.	Reduced use of personal vehicles, increased active transportation

MANAGE **WATER AND WASTE SUSTAINABLY**

Managing waste sustainably requires actions ranging from smart consumer choices to waste systems and markets. A circular economy keeps material in use to reduce GHG emissions over the life-cycle of materials and products. Robust community recycling and composting, and strong markets for using these commodities is needed. Methane and other potent GHG emissions from landfills and wastewater systems can be captured and utilized.

LEAD

- Increase composting and biological treatment of waste
- Utilize compost and biosolids in landscaping
- Reduce energy used to process and deliver safe drinking water
- Reduce energy needed to manage wastewater
- Shift both drinking and wastewater operations to clean energy sources
- Conserve water and operate efficient water utilities to reduce energy demands
- Capture and convert wastewater biogas to energy (also *Encourage* others to do so)

ENCOURAGE

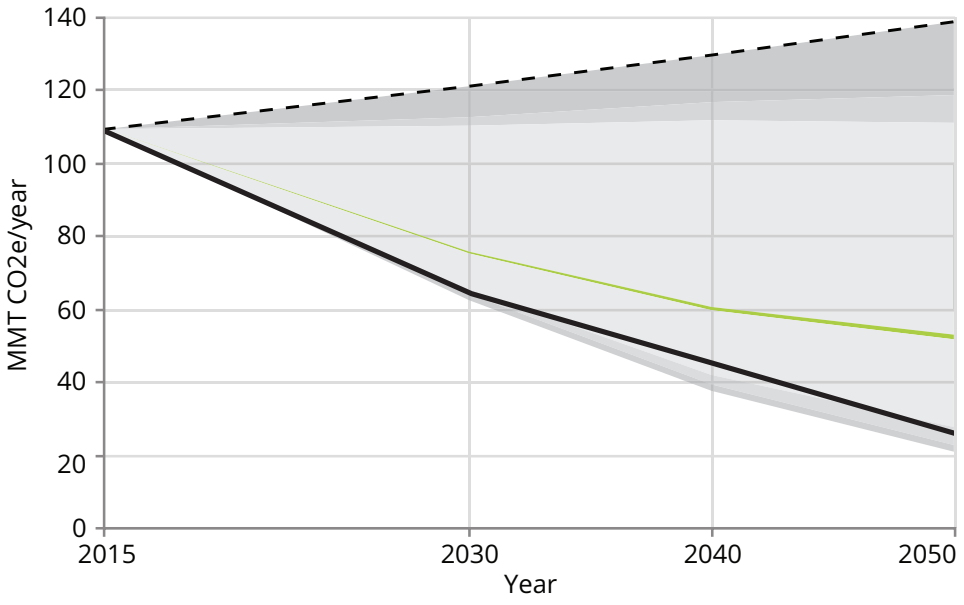
- Capture landfill emissions and eliminate pipeline methane
- Support circular economies
- Increase the volume of waste that is recycled and composted
- Encourage water conservation

EQUITY CONSIDERATIONS

- Reduce exposure to litter and illegal dumping
- Smart purchasing reduces waste
- Replace lead service lines for safe drinking water delivery
- Site landfills and waste operations to avoid harm to low-income and communities of color

OUTCOMES & CO-BENEFITS

- Reduce methane gas emissions
- Reduce embedded energy and emissions from production, transport, and disposal of materials
- Reduce persistent waste like plastic
- Grow recycling and organic waste industries
- Capture value from waste stream and operations



Manage Waste and Water Sustainably reduction targets (MMT CO2e)

2030 **0.5**

2040 **0.9**

2050 **1.3**

Business As Usual

Target

7. MANAGE **WATER AND WASTE SUSTAINABLY**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Capture landfill emissions and eliminate pipeline methane emissions.	ENCOURAGE	Proven	Medium	$$	Med High	Landfill operators, clean energy industry	Reduce exposure of vulnerable residents. Site landfills and waste operations to avoid harm to low-income and communities of color.	Reduced methane gas emissions
b	Capture and convert wastewater biogas to energy.	LEAD ENCOURAGE	Proven	Medium	$$$	High	MWRD, POTW		Displacement of fossil fuels
c	Increase composting and biological treatment of waste. Utilize compost and biosolids in landscapes.	LEAD ENCOURAGE	Proven	Low	$$$	High	SWAs, waste industry		Expanded recycling and organic waste industries; value from waste captured
d	Support circular economies.	ENCOURAGE	Evolving	Combined High	$$	High	Economic development organizations, businesses, waste industry	Reduce exposure to litter and illegal dumping. Site landfills and waste operations to avoid harm to low-income and communities of color.	Reduced embedded energy from production, transport, and disposal of materials; reduced persistent waste like plastic; value from waste stream and operations captured; household budgets stretched through smart purchasing
e	Increase the volume of waste that is recycled and composted.	ENCOURAGE	Contingent		$$$	Med	Constituents, employers, local businesses, institutions, waste industry		
f	Reduce energy needed to deliver safe drinking water and shift operations to clean energy sources.	LEAD	Proven	Low	$$	High	Water supply industry	Eliminate lead pipes. Provide access to safe, clean, and affordable water to all.	Modern, resilient, and efficient water utilities
g	Reduce energy needed to manage wastewater and shift operation to clean energy sources.	LEAD	Proven	Low	$$	High	Utilities, POTW	Provide access to safe, clean and affordable water utilities to all.	
h	Encourage water conservation.	ENCOURAGE	Proven	Low	$	Low	Nonprofits, water utilities	Reduce water burden.	Conserve water supply

SUSTAIN **ECOSYSTEMS TO SEQUESTER CARBON**

Growing and sustaining urban forests and natural ecosystems is a nature-based solution that will help meet the region's climate mitigation target. All other mitigation objectives aim to rapidly reduce GHG emissions, while thriving trees, robust landscapes, and the soils that support them, capture CO_2. All communities can plant and protect trees and both public and private property owners can contribute by growing and sustaining healthy urban ecosystems at any scale.

LEAD

- Manage public and private landscapes to optimize ecosystem services and support biodiversity
- Plant trees and sustain the urban forest (also *Encourage* others to do so)

ENCOURAGE

- Encourage citizen tree stewardship
- Encourage property owners to install and maintain sustainable and native landscapes

ENACT

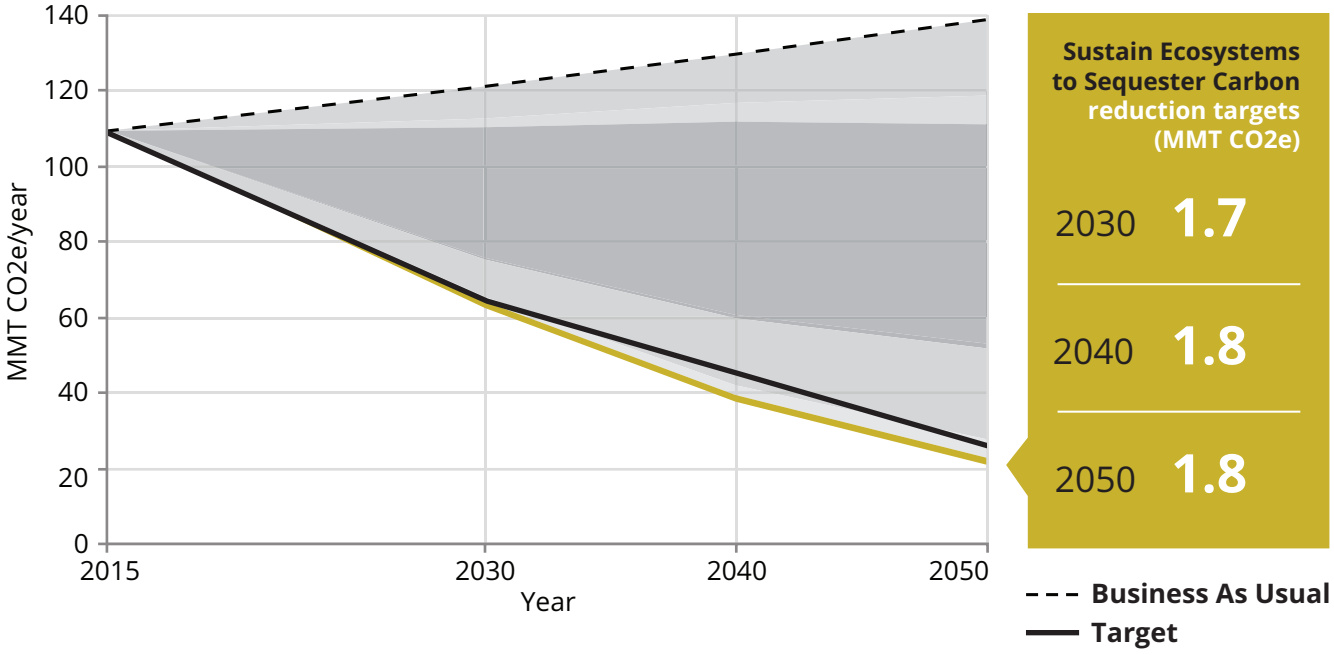
- Preserve soil through low-impact development and restore soil integrity

EQUITY CONSIDERATIONS

- Maintain accessible open space to invite safe and healthful activity
- Sustain tree canopy for cooling benefits in vulnerable communities
- Mitigate and restore nature on contaminated sites in environmental justice communities

OUTCOMES & CO-BENEFITS

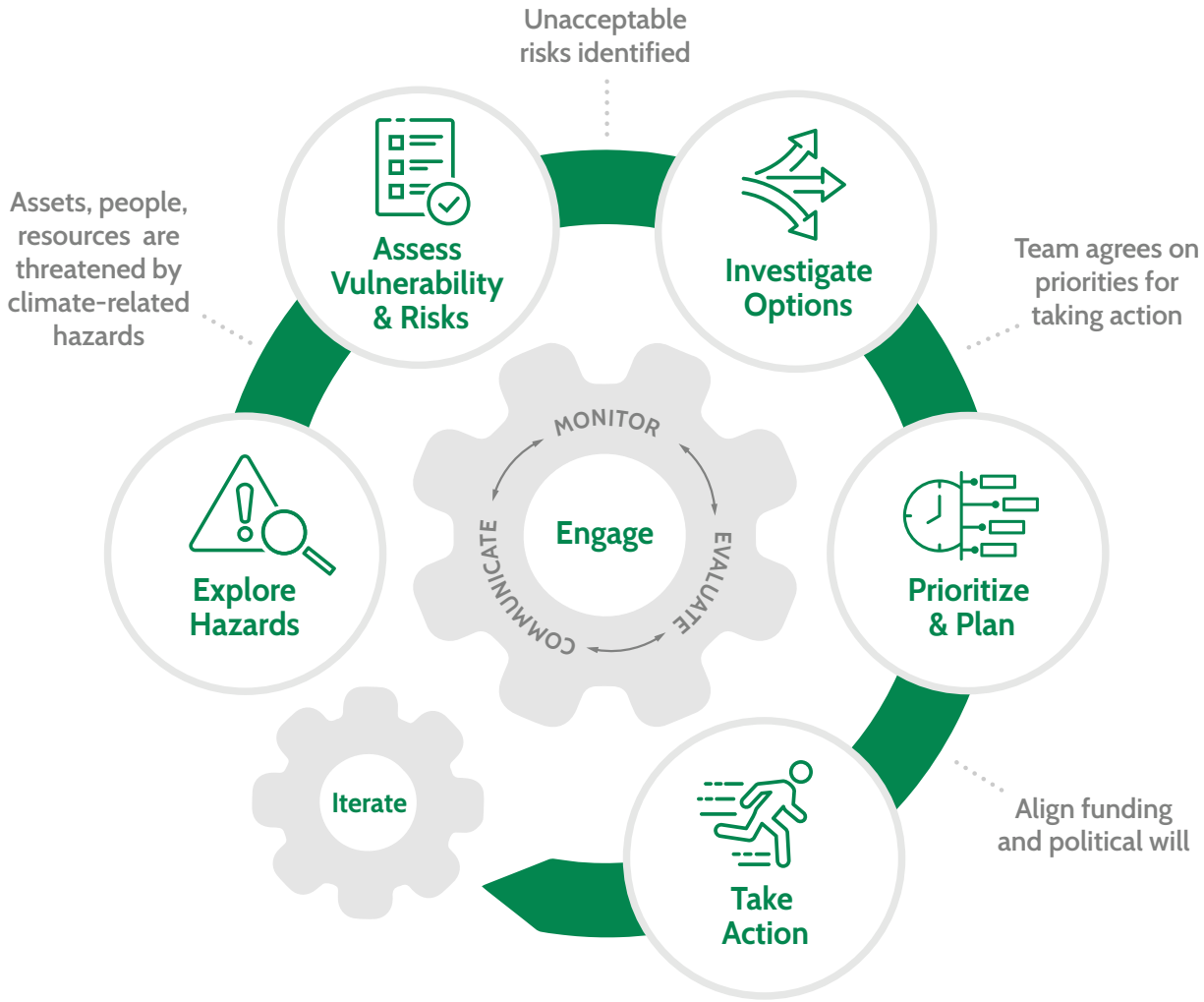
- Improve air quality
- Sustainably manages stormwater
- Cooling shade mitigates heat islands
- Low impact construction preserves soil and water quality
- Shade reduces cooling energy demands
- Quality open space encourages active transportation and lifestyles
- Enhances livability and community character
- Supports pollinator and wildlife habitat



8. SUSTAIN **ECOSYSTEMS TO SEQUESTER CARBON**

	Strategy	*Municipal Role*	*Solution Status*	*GHG Reduction Potential*	*Cost*	*Effort Required*	*Lead Partners & Resources*	*Achieve Equity*	*Outcomes (Co-benefits)*
a	Grow and manage public landscapes to optimize ecosystem services and support biodiversity.		Proven	Sequestration	$$	High	IDNR, forest preserve & park districts, property owners, businesses, institutions, nonprofits, MWRD	Maintain accessible open space to invite safe and healthful activity.	Stormwater managed sustainably; pollinator and wildlife habitat supported; quality open space encourages active transportation and lifestyles
b	Encourage property owners to install and maintain sustainable and native landscapes.		Proven		$	Med	Constituents, property owners, park districts, IDOT	Sustain tree canopy and gardens for desired cooling benefits in vulnerable communities.	
c	Plant trees and sustain the urban forest.		Proven		$	Med			
d	Encourage citizen tree stewardship.		Proven		¢	Med	Nonprofits, public gardens, MWRD, POTW, compost industry		Improved air quality; cooling shade mitigates heat islands; reduced cooling energy demands; enhanced livability
e	Preserve soil through low-impact development and restore soil integrity.		Aspirational		$$$	High	Developers, counties, MWRD, POTW, compost industry	Remediate contaminated soils and restore nature to sites in vulnerable communities.	Clean water; healthy ecosystems

STEPS TO RESILIENCE



Populations, infrastructure, and resources will never be completely "resilient", and there will always be some chance of an acute hazard. Therefore, communities, regional planners, and state government should commit to persistent adaptation, revisiting the *Steps to Resilience* continually, over time.

ADAPTATION OBJECTIVES AND STRATEGIES

OVERARCHING ACTIONS TO BUILD RESILIENCE

ENGAGE AND EDUCATE THE COMMUNITY:

- Inform the community about changing weather hazards and risks.
- Encourage families to prepare an emergency response plan.
- Foster community spirit to recover, adapt and "bounce forward" from disaster.
- Employ an effective early warning and response system.

INCORPORATE EQUITY AND INCLUSION:

- Collaborate to ensure residents most vulnerable to heat, air pollution and flooding are connected to emergency relief services.
- Include vulnerable populations in planning and prioritize investments to protect them.
- Assure community education messages are accessible in all languages and formats.

COLLABORATE AND BUILD CAPACITY:

- Coordinate resiliency efforts with federal, state, and regional agencies.
- Access and share timely weather data.
- Manage public and private landscapes to optimize ecosystem services and support biodiversity
- Strengthen emergency and adaptive response skills among staff, civic leaders, and allied organizations.

ADAPT OPERATIONS AND INVESTMENTS:

- Integrate climate resiliency into decision-making about capital expenditures.

ENACT PLANS AND POLICIES:

- Assess climate vulnerability and risks to local infrastructure.
- Adopt and integrate county hazard mitigation plan into local plans and policies.
- Integrate climate impacts and vulnerability into relevant plans and regulations.
- Proactively update codes to reflect evolving climate conditions.
- Incentivize or require resilient building design.
- Reduce sprawl by promoting infill development.
- Prioritize transit-oriented development and transit-supportive land uses.
- Participate in the Community Rating System and National Flood Insurance Program.
- Guide future development plans to conserve and restore open space, soil, trees, and native landscapes to preserve ecosystem services.

FLOODING AND HOMES

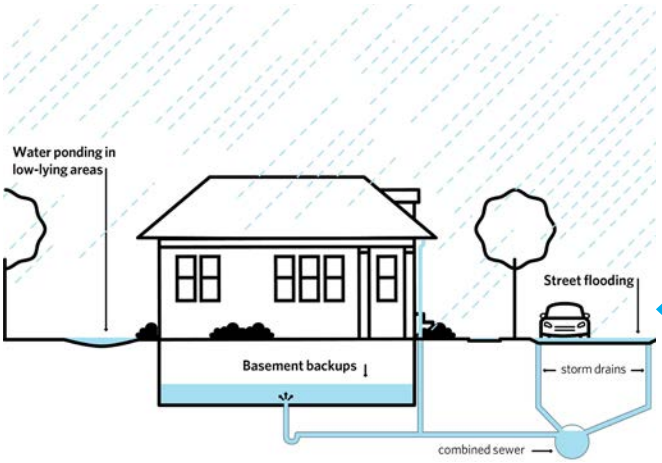
In the Chicago region, heavy rainfall events are increasingly frequent and severe, causing more flooding. Flooding is the climate-related hazard most residents and leaders want to address.

> *Some neighborhoods experience flooding after less than two inches of rain—small storms that, over time, result in significant harm to property and quality of life.*
>
> *ON TO 2050*

It will take all of us to build resilience to this growing hazard, from individuals to neighborhoods and local governments. Efforts should be focused to help vulnerable communities "bounce forward" from flooding events. Homeowners and renters must be aware of their flood risk so they can take steps to build personal resilience.

MITIGATION CO-BENEFITS:

Managing stormwater using green infrastructure saves energy.



Source: CMAP

ACTIONS TO BUILD RESILIENCE

ENGAGE AND EDUCATE THE COMMUNITY:

Inform the community about weather hazards, flood risk, and encourage preparation at home. Promote green infrastructure practices. Promote IDPH standards for post-flood clean up. Incentivize overhead basement sewer conversion. Foster community spirit to bounce forward from disaster.

INCORPORATE EQUITY AND INCLUSION:

Include vulnerable residents in planning and prioritize investments to protect them. Collaborate to ensure residents most vulnerable to flooding are connected to relief services.

COLLABORATE AND BUILD CAPACITY:

Coordinate resiliency efforts with federal, state, and regional planning agencies. Access and share timely weather data. Strengthen emergency and adaptive response skills among staff, civic leaders and allied organizations.

ENACT PLANS AND POLICIES:

Participate in the Community Rating System and National Flood Insurance Programs. Guide future development to reduce sprawl, conserve land and protect ecosystem services. Incentivize or require resilient building design. Optimize tree planting and protect existing trees for maximum stormwater benefits. Acquire and remove flood-prone homes.

Many of our sewers are connected to our storm drains, so when the streets flood, our homes and basements can too. A couple of things that we can do to help—disconnect our downspouts from the stormwater system, and install overhead basement plumbing.

FLOODING AND TRANSPORTATION

Flooding limits emergency access to neighborhoods. Roads provide vitally important access for safety, essential goods, and emergency services, and many neighborhoods and businesses can become isolated during flood events.

Of course, roads are also essential for people to move from where they live to where they work and meet with others. Flooding can be both acute due to heavy precipitation or chronic due to failing infrastructure. Both issues need to be addressed to create a truly resilient community.

MITIGATION CO-BENEFITS:

Resilient transit systems reduce vehicle miles traveled.

Image credit, above: CMAP, Image credit, right: Lake County Stormwater Management Commission

ACTIONS TO BUILD RESILIENCE

INCORPORATE EQUITY AND INCLUSION:

Assure transit along routes serving vulnerable populations is accessible and operable during a flood. Include vulnerable residents in planning and prioritize investments to protect them.

COLLABORATE AND BUILD CAPACITY:

Coordinate resiliency efforts with federal, state, county, and regional planning agencies. Collaborate on emergency transportation and logistics plans to move vital resources. Monitor and share real-time roadway conditions.

ENACT PLANS AND POLICIES:

Conduct climate vulnerability assessment and risks to local transportation infrastructure. Adopt and integrate county hazard mitigation plan into local plans and policies. Promote connected and walkable neighborhoods. Prioritize transit-oriented development.

ADAPT OPERATIONS AND INVESTMENTS:

Assess and adapt vulnerable transportation infrastructure to be responsive to changing climate conditions. Integrate stormwater management into transportation projects. Respond to weather events to ensure mobility.

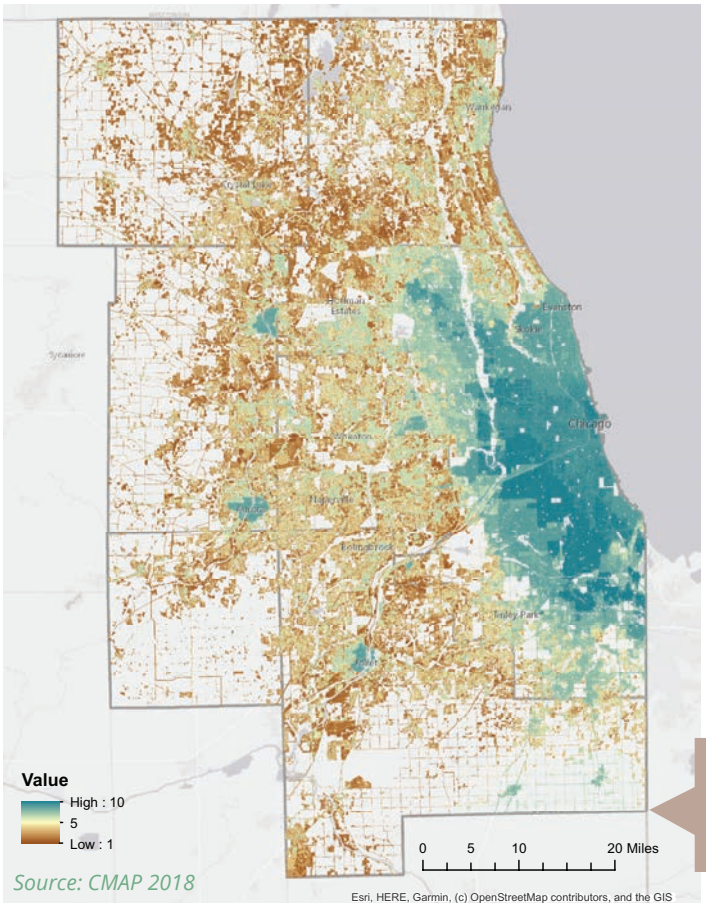
STORMWATER AND INFRASTRUCTURE

Floods are the most common and most costly disasters in Illinois. Heavy rainfall events are increasing in frequency and severity, pushing existing bridges and culverts beyond capacity and causing more flooding across the region. Cities and towns struggle to maintain that infrastructure, let alone replace it. Many structures are in floodplains and urban flood risk areas.

Stormwater management must be part of regional planning. Green infrastructure includes preserved habitat, open space, and wetlands, each of which buffers these problems and improves quality of life. Gray infrastructure includes basins, sewers, and other engineering solutions, such as those included in the Tunnel and Reservoir Plan (TARP).

Image credit: CMAP

URBAN FLOOD SUSCEPTIBILITY INDEX 2017



Source: CMAP 2018

The Urban Flood Susceptibility Index highlights areas with attributes associated with an elevated risk of urban flooding.

ACTIONS TO BUILD RESILIENCE

ENGAGE AND EDUCATE THE COMMUNITY:

Foster community spirit to recover, adapt and "bounce forward" from disaster. Encourage residents and businesses to disconnect downspouts from sewers and adopt water efficient behaviors.

INCORPORATE EQUITY AND INCLUSION:

Include vulnerable populations in planning and prioritize investments to protect them.

COLLABORATE AND BUILD CAPACITY:

Coordinate with federal, state, and regional agencies to manage stormwater.

ENACT PLANS AND POLICIES:

Integrate climate impacts and vulnerability into relevant plans and regulations. Adopt and integrate county hazard mitigation plan into local plans and policies. Participate in the Community Rating System and National Flood Insurance Programs. Guide development to conserve land and ecosystem services. Allow developments flexibility to meet stormwater requirements.

ADAPT OPERATIONS AND INVESTMENTS

Assess and adapt stormwater systems to respond to future rainfall projections. Establish green infrastructure and include maintenance in capital improvement plans.

HEAT AND HEALTH

Average temperatures in the Chicago region are increasing, not only during the day but also at night. This trend is projected to increase, with heat waves becoming more prevalent. This is adding stress to people, regional power supply, water resources, and ecosystems.

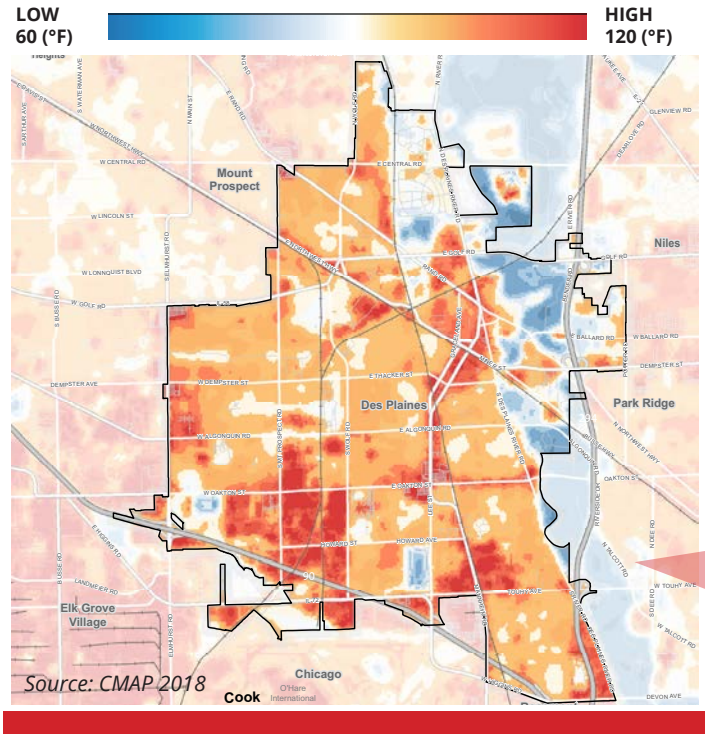
Residents need to cool their homes for longer each day, further burdening household budgets. This may be particularly difficult for socially vulnerable populations, including people on fixed incomes and families living below the poverty line.

Communities may need to provide more places and ways for these vulnerable populations to stay well—urban shade, splash pads, parks in neighborhoods, or community cooling centers. Home owners may build adaptive capacity by replacing dark roof materials with light-colored shingles or green roofs.

MITIGATION CO-BENEFITS:

Cooler neighborhoods and homes save energy, especially during very hot weather when energy demands are high.

City of Des Plaines Land Surface Temperature (LST)



Source: CMAP 2018

Areas with more concrete absorb and hold heat, increasing the impact for heat waves on vulnerable populations.

ACTIONS TO BUILD RESILIENCE

ENGAGE AND EDUCATE THE COMMUNITY:

Inform the community about changing heat hazards and risks; encourage preparation. Foster social cohesion. Engage residents with services that support health and wellness.

INCORPORATE EQUITY AND INCLUSION:

Collaborate to ensure vulnerable residents are connected to relief services. Include vulnerable residents in planning, and prioritize investments to protect them. Provide effective, accessible, and desired cooling interventions to vulnerable communities. Assure vital messages are accessible in all languages and formats.

COLLABORATE AND BUILD CAPACITY:

Strengthen emergency and adaptive response skills among staff, civic leaders, and allied organizations. Identify and mitigate urban heat islands. Facilitate compliance with federal air quality standards by businesses.

ENACT PLANS AND POLICIES:

Promote connected, complete and walkable neighborhoods. Optimize tree planting. Protect existing trees for maximum shading. Reduce sprawl by promoting infill development. Incentivize or require resilient building design. Proactively update building codes to reflect evolving conditions.

AIR QUALITY, FLOODING AND PUBLIC HEALTH

Epidemiologists evaluate many factors that either diminish or improve public health. Climate-related hazards can multiply with one another as well as non-climate factors to exacerbate health impacts. For example, poor air quality compounds the effects of flooding on mold, respiratory health, allergies, waterborne disease, and other consequences. Flood damage to homes can impact mental health due to stress from the loss itself, the resulting displacement, or ongoing problems managing recovery from a flood.

The underlying causes of climate change from greenhouse gas emissions bring a number of additional stressors to air quality, which, in turn, diminish quality of life and life expectancy, particularly for residents of urban and suburban areas.

MITIGATION CO-BENEFITS:

Preventing mold often involves securing the building envelope, insulation, and healthy outdoor air exchange. Reducing air pollution and lowering GHG emissions go hand-in hand.

Image credit: Neighborhood Housing Services

Image credit: @macnifying_glass on Instagram
A dust cloud covered Little Village in April 2020, after a smokestack at the Crawford Coal Plant was demolished.

ACTIONS TO BUILD RESILIENCE

ENGAGE & EDUCATE:

Inform the community about air pollution action days. Educate residents about maintaining healthy indoor air quality and about services that support health and wellness. Promote the Illinois Department of Public Health standards for post-flood clean up.

INCORPORATE EQUITY AND INCLUSION:

Assess local air quality and take action to protect vulnerable populations from pollution. Collaborate to ensure vulnerable residents are connected to and utilizing human services.

COLLABORATE AND BUILD CAPACITY:

Facilitate compliance with federal air quality standards by businesses.
Collaborate with public health and emergency management agencies to strengthen adaptive response skills among staff, civic leaders, and allied organizations. Manage public and private landscapes to provide accessible recreation and optimize ecosystem services.

ENACT PLANS AND POLICIES:

Integrate climate impacts and vulnerability into relevant plans and regulations.

DROUGHT AND WATER SUPPLY

Sustaining water supply is critical to both climate adaptation and mitigation. Some communities in the region are facing water supply limitations within the next decade. Surface and groundwater supplies are vulnerable to drought. Regional water supply planning is essential to help communities adapt and sustain water resources.

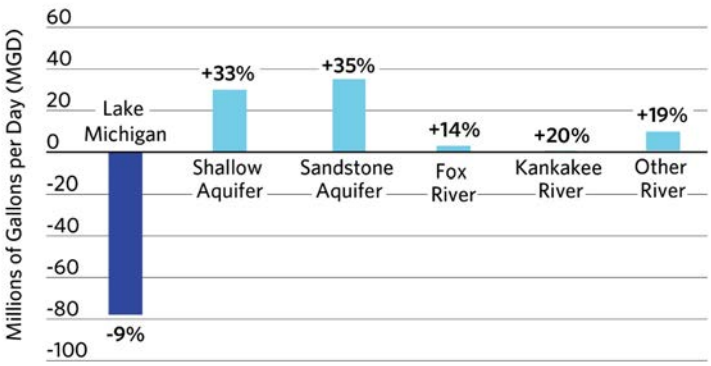
Water conservation policies like outdoor watering regulations, sustainable landscaping and conservation practices by water customers are important solutions. Affordable access to safe drinking water for all protects public health and eases household utility burden.

Low water levels and higher temperature yield drought. Both can reduce water quality, driving up energy demands and costs for water supply.

MITIGATION CO-BENEFITS:

Modernizing water delivery systems for efficiency and resilience reduces energy demands.

PROJECTED CHANGES IN WATER DEMAND BY WATER SOURCE 2011 - 2050



Source: CMAP

Image credit: CMAP

ACTIONS TO BUILD RESILIENCE

ENGAGE & EDUCATE:
Encourage residents and businesses to conserve water and adopt green infrastructure practices.

INCORPORATE EQUITY AND INCLUSION:
Assure affordable access to safe drinking water for all. Include vulnerable populations in planning and prioritize investments to protect them. Replace lead service lines for safe drinking water delivery.

COLLABORATE AND BUILD CAPACITY:
Coordinate resiliency efforts with federal, state, and regional planning agencies to sustainably manage water supply. Monitor and protect water quality in private wells

ENACT PLANS AND POLICIES:
Adopt a water conservation plan. Enact and enforce outdoor watering regulations responsive to drought conditions. Protect surface and groundwater from contamination.

ADAPT OPERATIONS AND INVESTMENTS
Create resilient water utilities through efficiency, conservation, demand management, technology, and flexible operations. Assess and adapt vulnerable infrastructure to be responsive to changing climate.

1. ENGAGE AND EDUCATE THE COMMUNITY ABOUT CLIMATE RESILIENCE AND ADAPTATION

	Strategy	Overarching resilience	Heat & Health	Flooding & Homes	Stormwater & Infrastructure	Flooding & Transport	Drought & Water	Air Pollution & Health	Municipal Role	Solution Status	Cost	Effort Required	Lead Partners & Resources	Outcomes (Co-benefits)
a	Inform the community about changing weather hazards and risks. Encourage preparation.	x	x	x				x	ENCOURAGE	Proven	¢	Low	NOAA, GLISA, IEMA, State Climatologist, StR, BRACE, DRSC, APWA, stormwater agencies	Prepared and engaged constituents; community cohesion; positive health outcomes; private assets preserved; safe and healthy constituents
b	Engage the community about services that support health and wellness.		x					x	ENCOURAGE	Proven	$	Med	Public health agencies, hospitals, BRACE	
c	Encourage families to prepare an emergency response plan.	x	x	x					ENCOURAGE	Proven	¢	Med	IEMA, Ready.gov	
d	Foster community spirit to recover, adapt and "bounce forward" from disaster.	x	x	x	x	x			ENCOURAGE	Proven	¢	Med-High	Constituents, CBO, FBO	
e	Educate the community about air pollution action days and maintaining healthy indoor air quality.							x	LEAD	Proven	¢	Low	IEPA, IDPH, U.S. EPA	
f	Engage residents and businesses in conserving water.						x		ENCOURAGE	Proven	$	Low	AWWA, JAWA, U.S. EPA Water Sense, CMAP, IISG	Reduced water costs, water supply conserved
g	Promote green infrastructure practices.			x			x		ENCOURAGE	Proven	$	Med-High	U.S. EPA Water Quality scorecard, IISG, CNT, stormwater agencies, nonprofits	Reduced energy use for processing stormwater, assets preserved, safe and healthy constituents
h	Encourage residents and businesses to disconnect downspouts from sewers.				x				ENCOURAGE	Proven	$	Med	Stormwater agencies, POTW	
i	Promote IDPH standards for post-flood clean up.			x				x	ENCOURAGE	Proven	¢	Low	IDPH	
j	Support and incentivize overhead sewer conversion in basements.			x					LEAD	Proven	$$	Med-High	MWRD, POTW	

2. INCORPORATE EQUITY AND INCLUSION INTO CLIMATE ADAPTATION EFFORTS

	Strategy	Overarching resilience	Heat & Health	Flooding & Homes	Stormwater & Infrastructure	Flooding & Transport	Drought & Water	Air Pollution & Health	Municipal Role	Solution Status	Cost	Effort Required	Lead Partners & Resources	Outcomes (Co-benefits)
a	Collaborate to ensure residents most vulnerable to heat, air pollution and flooding are connected to relief services.	x	x	x		x	x	x	LEAD ENCOURAGE	Proven	$	Med	CAA, BRACE, public health organizations, CBO, FBO, IEMA	Health & well-being of most vulnerable residents protected; equitable access to health, services, and opportunity; equitable investment; positive health outcomes
b	Include vulnerable populations in planning and prioritize investments to protect them.	x	x	x	x	x	x	x	LEAD	Proven	$	Med	CMAP, CBO, public health organizations, BRACE	
c	Ensure that high quality essential human services programs are available and utilized.		x				x	x	ENCOURAGE	Proven	$$	Med	CBO, FBO, public health organizations	
d	Assess local air quality and take action to protect vulnerable populations from pollution.							x	ENCOURAGE	Contingent	$	Med	IEPA, public health agencies, BRACE, RHA	
e	Provide effective and accessible cooling interventions to vulnerable residents.		x						LEAD ENCOURAGE	Evolving	$$	Med	Park districts, public health agencies, cultural venues, transit services	
f	Assure community education messages are accessible in all languages and formats.	x	x	x	x	x	x	x	LEAD	Proven	$	Low	Nonprofits, ADA coordinators	
g	Assure affordable access to safe drinking water for all.						x		LEAD	Proven	$$$	High	AWWA, JAWA, U.S. EPA, ISWS, CMAP, MPC	Water burden lessened, safe and healthy constituents
h	Assure transit routes serving vulnerable populations are accessible and operable during weather events.					x			ENCOURAGE	Evolving	$$	High	RTA, CTA, Metra, Pace, BRACE, public health agencies	Mobility; access to economic opportunity

3. COLLABORATE AND BUILD CAPACITY FOR MORE RESILIENT COMMUNITY

	Strategy	Overarching resilience	Heat & Health	Flooding & Homes	Stormwater & Infrastructure	Flooding & Transport	Drought & Water	Air Pollution & Health	Municipal Role	Solution Status	Cost	Effort Required	Lead Partners & Resources	Outcomes (Co-benefits)
a	Coordinate resiliency efforts with federal, state and regional agencies.	x		x	x	x	x		LEAD ENCOURAGE	Contingent	$$	High	FEMA, IEMA, EMA, MABAS, NIMS, IDNR, IDOT, CMAP, counties, public health agencies, park and forest preserve districts, utilities, StR, DRSC	Shared and leveraged resources, optimized efficiency and outputs; greater adaptive capacity; assets preserved
b	Strengthen emergency and adaptive response skills among staff, civic leaders, and allied organizations.	x	x	x				x	LEAD	Proven	$	Med	FEMA, IEMA, NIMS, IAFSM, APWA, AWWA, MABAS, public health agencies	
c	Develop an emergency transportation and logistics plan to move vital resources.					x			LEAD ENCOURAGE	Evolving	$$	High	IEMA, IDOT, counties, EMA, APWA, public health agencies	Vital services and economy protected
d	Monitor and share real-time roadway conditions.					x			LEAD ENCOURAGE	Evolving	$	Low	IDOT, counties, townships, APWA	Timely and targeted response to climate hazards
e	Access and share timely weather data.	x		x					LEAD	Proven	¢	Low	NOAA, NWS, State Climatologist	
f	Facilitate compliance with federal air quality standards by businesses.		x					x	ENCOURAGE	Contingent	$	Med-High	IEPA, U.S. EPA	Constituents protected from extreme heat
g	Identify and mitigate urban heat islands.		x						ENCOURAGE	Evolving	$$$	High	U.S. EPA, USFS, GLISA, IEPA, State Climatologist utilities, park & forest preserve districts, public health agencies	
h	Manage public and private landscapes to optimize ecosystem services and support biodiversity.	x						x	LEAD ENCOURAGE	Proven	$$$	High	USFS, IDNR, park & forest preserve districts, SWCD, CW, watershed organizations, nonprofits	Natural systems optimized for resiliency and public well-being; air and water quality protected; threats from stormwater and heat islands managed
i	Collaborate to sustainably manage regional water supply.						x		LEAD ENCOURAGE	Evolving	$$$	High	ISWS, IDNR, CMAP, MPC	Water supply protected and conserved
j	Monitor and protect water quality in private wells.						x		ENCOURAGE	Evolving	$$	Med	BACOG, ISWS	
k	Collaborate to sustainably manage stormwater.				x				LEAD ENCOURAGE	Evolving	$$$	High	U.S. EPA, FEMA, IEMA, IAFSM, stormwater agencies, SWCS, IDNR, counties, townships, park & forest preserve districts, IDOT & transportation agencies	Resources shared and leveraged; greater adaptive capacity; flood impacts reduced; assets preserved

4. ENACT PLANS AND POLICIES FOCUSED ON ADAPTATION AND RESILIENCE

	Strategy	Overarching resilience	Heat & Health	Flooding & Homes	Stormwater & Infrastructure	Flooding & Transport	Drought & Water	Air Pollution & Health	Municipal Role	Solution Status	Cost	Effort Required	Lead Partners & Resources	Outcomes (Co-benefits)
a	Adopt and integrate county hazard mitigation plan into local plans and policies.	x			x	x			ENACT	Proven	$$	Med-High	FEMA, BRIC, IEMA, ISI, counties, APA, CMAP	Assets and operations prepared; greater adaptive capacity; investments protected; safe and healthy constituents
b	Integrate climate impacts and vulnerability into relevant plans and regulations.	x			x			x	ENACT	Evolving	$$	High	APA, APWA, stormwater agencies, CMAP	
c	Proactively update codes and standards to reflect evolving climate conditions.	x	x					x	ENACT	Evolving	$$	Med	CMAP, ICC, IDNR, ISI, GLISA, stormwater agencies	
d	Incentivize or require resilient building design.	x	x	x					ENACT ENCOURAGE	Evolving	$$	Med	APA, ISI	
e	Guide future development to conserve land and ecosystem services.	x	x	x	x				ENACT ENCOURAGE	Proven	$$$	High	CMAP, APA	Landscapes preserved and optimized for ecosystem services; more pervious surfaces; more sustainable transportation systems; energy and resources conserved; positive health outcomes; greater adaptive capacity; planning for prioritized investment; assets protected; safe and healthy constituents
f	Promote connected, complete, and walkable neighborhoods.		x			x			ENACT ENCOURAGE	Evolving	$$$	Med-High	CMAP, APA	
g	Prioritize transit-oriented development and transit-supportive development.	x				x			ENACT ENCOURAGE	Evolving	$$$	High	CMAP, APA, RTA	
h	Participate in the Community Rating System and National Flood Insurance Program.	x		x	x				ENACT LEAD	Proven	$$	Med-High	FEMA, IEMA, IDNR, CRS, NFIP, IAFSM	
i	Protect surface and groundwater from contamination.						x		ENACT ENCOURAGE	Proven	$$$	High	IEPA, IDNR, ISWS, counties, watershed organizations	Water supply protected and conserved; safe and healthy constituents
j	Allow developments flexibility to meet stormwater requirements.				x				ENACT ENCOURAGE	Proven	$$	Med-High	APA, counties, stormwater agencies	Landscapes conserved for ecosystem services; energy and resources conserved
k	Adopt a water conservation plan.						x		ENACT	Evolving	$$	High	CMAP, AWWA, U.S. EPA WaterSense, IISG	Water supply protected and conserved; energy for water distribution conserved; costs reduced
l	Enact and enforce outdoor watering regulations responsive to drought conditions.						x		ENACT	Proven	$	Med	CMAP, NWPA, MPC, IISG	
m	Optimize tree planting and protect existing trees for maximum shading and stormwater benefits.		x	x					LEAD ENACT ENCOURAGE	Proven	$$	High	USFS, IDNR, utilities, public gardens, watershed organizations, stormwater agencies, SWCD, park & forest preserve districts	Heat and flooding hazard lessened; cooling energy demand lessened; air and water quality improved

5. ADAPT OPERATIONS AND INVESTMENTS FOR FUTURE CLIMATE CONDITIONS

	Strategy	Overarching resilience	Heat & Health	Flooding & Homes	Stormwater & Infrastructure	Flooding & Transport	Drought & Water	Air Pollution & Health	Municipal Role	Solution Status	Cost	Effort Required	Lead Partners & Resources	Outcomes (Co-benefits)
a	Integrate stormwater management into transportation projects.				x	x			LEAD ENCOURAGE	Evolving	$$$	Med-High	IDOT, counties, townships, GLISA, RTA, CTA, Metra, Pace	Assets and operations prepared; greater adaptive capacity; assets protected; services and economy protected; mobility maintained
b	Assess and adapt vulnerable infrastructure to be responsive to changing climate conditions.	x			x	x	x		LEAD ENCOURAGE	Evolving	$$$	Med-High	StR, IDOT, counties, townships, ISI, APWA	
c	Acquire and remove floodprone homes			x					LEAD ENCOURAGE	Proven	$$$	High	Counties, FEMA, IEMA, IDNR	
d	Respond to weather events to ensure mobility					x			LEAD ENCOURAGE	Proven	$$	High	IDOT, counties, townships, RTA, CTA, Metra, Pace	
e	Manage public and private landscapes to provide accessible recreation and optimize ecosystem services.	x	x					x	LEAD	Proven	$$$	High	Park & forest preserve districts, SWCD, watershed organizations, IAFSM	Greater adaptive capacity, community cohesion, natural systems optimized for resiliency and public well-being; air and water quality improved; threats from stormwater and heat islands managed
f	Establish green infrastructure and include maintenance in capital improvement plans.				x				LEAD	Proven	$$$	High	MWRD, stormwater agencies, IEPA, IISG	Water quality protected; assets protected; flood impacts reduced
g	Assess and adapt stormwater systems to respond to future rainfall projections.				x				LEAD	Evolving	$$$	High	ISWS, IEPA, state climatologist, IAFSM, stormwater agencies, POTW, APWA	
h	Create resilient water utilities through efficiency, conservation, demand management, technology, and flexible operations.						x		LEAD	Proven	$$$	High	AWWA, JAWA, U.S. EPA, CMAP, MPC	Water supply protected and conserved; energy conserved

Table 2. All Mitigation and Adaptation Objectives and Corresponding Adaptation and Mitigation Benefits

Mitigation Objective	***Outcome/Co-benefits***	***Adaptation Benefit***
Demonstrate Leadership to Reduce Emissions	Engaged constituents, public support, green jobs, efficiencies and cost-savings	More resilient communities
Decarbonize Energy Sources	Cleaner air and water, renewable energy, potential improvements to energy security	More resilient electric grid
Optimize Building Energy	Improved building performance, lower energy costs/energy burden, cleaner air	More resilient buildings
Implement Clean Energy Policies	Clean energy jobs, leveraged investment	Economic development
Decarbonize Transportation	Cleaner air, lower long-term fuel costs, reduced noise pollution, beneficial electrification	Less reliance on vulnerable fuel supply chain
Reduce Vehicle Miles Traveled	Less congestion, less reliance on single-occupancy vehicles, more connected communities, more social cohesion, more walking and biking and better health outcomes, lower transportation costs, reduced injuries/fatalities from road accidents	More resilient transportation systems
Manage Water and Waste Sustainably	Cleaner air and water, less waste	More resilient water and wastewater systems
Sustain Ecosystems to Sequester Carbon	Enhanced ecosystems, preserved biodiversity, improved quality of life and mental health, active and healthy lifestyles	Reduced flooding, cooler communities

Adaptation Objective	***Outcome/Co-benefits***	***Mitigation Benefit***
Engage and educate the community about climate resilience and adaptation	Prepared and engaged constituents, community cohesion, better health outcomes, private property and well-being preserved	Awareness of hazards and impacts builds support for climate mitigation actions
Incorporate equity and inclusion into climate adaptation efforts	Prepared and engaged constituents, community cohesion, improved health equity, private property preserved	
Collaborate and build capacity for more resilient community	Shared and leveraged resources, greater efficiency and outputs, greater adaptive capacity. Property, water supply, and other assets preserved	
Enact plans and policies focused on adaptation and resilience	Prepared assets and operations, greater adaptive capacity. Improved nature, quality of life	Reduced energy demands for water utilities. Healthy ecosystems help sequester carbon
Adapt operations and investments for future climate conditions	Prepared assets and operations, nature, quality of life, property, water supply and other assets preserved	Reduced energy demands for operations

CONCLUSION

This regional climate plan, and the process on which it is built, has revealed a need for urgent, coordinated action to both mitigate and adapt to climate change. Encouragement and assistance from NOAA's Climate Program Office and International Urban Cooperation has also spotlighted our region as a leader in collaborative climate planning. Our culture of cohesion and the collective expertise of stakeholders position us well to meet this challenge.

The climate mitigation objectives and strategies in this plan are tailored to address the greatest sources of greenhouse gas emissions and the most promising opportunities to meet the goal of **net zero emissions by 2050**. This plan also suggests strategies to address a set of high-priority climate impacts and offers targeted objectives and strategies to commit to **persistent, equitable adaptation**. The next steps for municipalities require an iterative approach to using the *Steps to Resilience*.

Municipal governments are uniquely positioned to engage constituents to bring about meaningful actions in both climate mitigation and adaptation. They have tools and expertise that can bolster community resilience. For example, capital planning can guide investments in infrastructure that can adapt to changing weather patterns. Municipal leaders can also cultivate cohesive and prepared communities that can endure and bounce forward from disasters.

Join us in working toward the goals and objectives of the Climate Action Plan for the Chicago Region. We recognize that hard work and a challenging shift to a new direction lies ahead on our journey. Regardless, we must begin movement toward a better future and begin now.

Image credit: Andy Marfia