2022 CAP

CHICAGO CLIMATE ACTION PLAN

CHICAGO
Mayor Lori E. Lightfoot

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INTRODUCTION

Dear Chicagoans,

On behalf of the Office of Mayor Lori E. Lightfoot, it is with tremendous pride and excitement that I share the draft of the 2022 Chicago Climate Action Plan (CAP) for your review and consideration. The CAP is a strategic document that outlines how the City of Chicago, our sister agencies, partners, businesses, and local residents will take action to address climate change for all 77 of our communities and collectively advance a thriving green economy for all our residents. Your thoughts, ideas, and feedback will help support us in finalizing and prioritizing a suite of actions and next steps to achieve our goals and build a just and equitable climate future for the City of Chicago.

The 2022 CAP builds off Chicago's longstanding commitment to mitigate climate change and set bold and ambitious sustainability priorities. Climate action planning in Chicago began first in 2008 when we released the Chicago Climate Action Plan, which outlined determined goals and actions to reduce citywide greenhouse gas (GHG) emissions to 80 percent below 1990 levels. In June 2017, Chicago updated its targets by committing to the goal of reducing citywide GHG emissions to levels equivalent to or greater than 26- 28% reduction from 2005 levels by 2025, which is the original commitment made by the Obama Administration as part of Paris Climate Agreement. Finally, in 2019, the City of Chicago committed to transitioning to 100% renewable energy by 2025 for municipal energy and 2035 city-wide.

To ensure widespread benefits for all Chicagoans, we must design more holistic solutions that reach beyond GHG reduction targets and are centered on equity and justice. We recognize that historic oppression, racism, and segregation in Chicago have led to disparities and inequities in public health, economic stability and overall quality of life, for our black, brown, and low-income communities, which makes these communities most vulnerable to the ongoing threat of climate change. Our commitment to equity will require focus and targeted actions to ensure that communities on the frontlines of the climate crisis are prioritized in the design and future implementation of the CAP. We must also intentionally build outcomes that deliver equitable co-benefits, including climate and environmental justice, improved air quality, household savings, wealth generation, and green jobs, that our communities need to thrive.

The COVID-19 pandemic, the exposure of deep and systemic racism, and the compounding impacts of the climate crisis have radically changed our world and have underscored the importance of prioritizing our residents, our communities, and our health. I urge you to join us in lifting up bold solutions for Chicago. We thank you in advance for your consideration of this draft document. We look forward to reviewing your feedback and to the release of a 2022 CAP that is reflective of our shared values.

In partnership,

Angela Tovar

ACKNOWLEDGEMENTS

The 2022 Climate Action Plan draft was developed with a sincere sense of hope, urgency, and ambition for Chicago's future. In the wake of another nationwide surge in COVID-19 cases, City departments, community partners, business leaders, and other stakeholders are working together to bring direct relief to residents and local businesses. Simultaneously, stakeholders are modernizing systems, policies, and investments to heal and restore communities; climate and environment are part of that work. With historic local, state, and federal investments becoming available, the time is now for transformative climate leadership.

The Office of the Mayor extends a warm note of appreciation to the various partners, advocates, and residents who engaged in the development of this plan. A special acknowledgment goes to the diverse group of internal and external stakeholders who ensured the 2022 CAP goals express the City's commitment to a more just and equitable city for all.

Additional information on the 2022 Climate Action Plan can be found at chicago.gov/climateactionplan including the CAP Draft Feedback Survey. The City of Chicago invites public comment on the 2022 Climate Action Plan Draft by feedback form, email (chicagocap@cityofchicaco.org), or phone hotline (+1 312-774-0100).

Blacks in Green

Delta Institute

Illinois Green Alliance

WSP USA

Department of Public Health (CDPH)

Chicago Department of Transportation (CDOT)

PLAN BACKGROUND

WHAT IS A CLIMATE ACTION PLAN?

Chicago cannot solve the global climate crisis on its own, but the City will continue to be a global leader in the fight. While grappling with the effects of the Great Recession, in 2008 Chicago became the first major American city to create a comprehensive climate action plan (CAP). Guided by residents, climate experts, and community organizations, Chicago's original CAP outlined a strategic framework for measuring and mitigating greenhouse gas (GHG) emissions and related climate impacts. It identified detailed climate actions City officials, businesses, and residents could take in alignment with community goals. While the 2008 CAP was ahead of its time, a lot has changed since then. It is time for an update that reflects the latest climate science, community needs, and commitment to a more just society. We have an opportunity to learn from our past and build upon Chicago's history of climate leadership.

Our new plan is a strong, bold response to the climate crisis. This response is rooted in equity and collaboration. This plan serves as a playbook to guide and enable actions that reduce Chicago's contribution to global climate change, prepare our communities for the effects of a changing climate, and support a just transition to a thriving green economy. Delivering a just transition requires enacting principles and processes that support communities which have been burdened by harmful economic, policy, and environmental practices so that all Chicagoans have access to clean environments and thriving economies.

Emission-reduction initiatives that increase household monetary savings, create new workforce opportunities, reduce pollution burden, improve access to public services, and support community health are prioritized in the CAP. The goals and strategies of this plan are ambitious. They cannot be achieved with current budgets, organizational structures, and labor markets. Advancing environmental justice and striving toward a more equitable city requires further organizational capacity building, zero-carbon economy skills training, cross-sector collaboration, and accountability.

Accountability

To achieve the ambitious goals of the 2022 Climate Action Plan (CAP), the written strategies must translate to real policies, programs, and partnerships benefitting Chicagoans. The scale of change envisioned in this plan requires many groups to take transformative actions. A strong accountability and reporting framework is needed to ensure that these actions begin, and that continual and meaningful progress is made until the City achieves a just zero-carbon economy. This plan was written with the acknowledgment that changes across government leadership can greatly impact the rate of progress towards the CAP's goals. Therefore, priorities and metrics of success must be co-developed and regularly evaluated with a variety of stakeholders to support consistent implementation despite staff or leadership changes. Progress reports must be easy to access and understand. They must track actions relevant to all Chicago communities, particularly traditionally underserved communities. The following accountability framework is a starting point—it will be refined by your input and by ongoing discussions across City departments and with frontline community leaders.

Governance and reporting

City departments and sister agencies will be key implementers of many CAP actions. Incremental targets that keep pace with the vision of the CAP will be explored by each department. Departmental targets will be shared and

tracked publicly. The City will also explore the establishment of a community-led climate advisory board and a forum for regular community participation in actions related to CAP implementation, reporting, and achievement.

The City also practices accountability by reporting progress on carbon-reduction strategies and other climate goals to a variety of third-party national and global institutions. This level of reporting supports implementation continuity between mayoral administrations. In addition, many of these institutions provide access to technical assistance or networks of other global cities leading on climate. These networks support Chicago in setting and achieving bold climate targets. These reports currently include citywide data, but additional details can be added to enable a deeper evaluation of community-level impact. Examples of this reporting include greenhouse gas inventory reporting every 3-5 years, annual reporting to CDP, and annual Clean Energy Scorecard rating by the American Council for an Energy-Efficient Economy (ACEEE).

Investing in Climate Equity

While climate change will affect all Chicagoans, its impact will not be felt equally across communities. As a way to strive toward greater climate equity, the City must evaluate and optimize practices across departments and sister agencies. These reviews should involve community leadership to ensure that improvements are informed by community needs. In addition to refining existing practices, the City will continue to identify funding opportunities to support building the capacity and capital required for progress.

As a part of the 2022 budget, the City has committed significant funding to strengthen existing, debut new, and anticipate future initiatives. The Climate Financing and Delivery Capacity section provides more detail about the historic climate action investments the City has made. Results from these investments will inform future climate policies and good performance will build momentum for additional funding.

Policy levers

The 2022 CAP serves as a goal-setting initiative to support future policy development and strategic planning. Formal resolutions have often been effective drivers of the City's sustainability vision. Resolutions must be introduced and passed by members of City Council and highlight City priorities. For example, the 2019 resolution, Support for Implementation of Clean Energy Transition Plan (R2019-157), established the City's goal to transition to citywide renewable energy by 2035. This resolution has kickstarted initiatives like the $200 million RFP for renewable energy supply to all City-owned buildings. Additional resolutions and ordinances will be developed to bolster the actions of the CAP.

Policies can establish a variety of incentives for compliance and penalties for non-compliance. All good policymaking requires intentional consideration for those facing the greatest impacts from the issue(s) being addressed through the policy. It is important to meaningfully engage these residents to ensure further, unintentional harm is not caused.

GLOSSARY

The 2022 CAP covers a diverse set of topics and issues. This glossary contains key words and definitions to support readers in better understanding the material covered throughout the report. The list will be modified based on community questions and feedback on the draft CAP.

Adaptation- Adaptation is the process of adjusting to or preparing for a changing environment. Adaptation reduces the harmful effects of climate change by managing economic resources and critical infrastructure, encouraging technological innovation, and applying equity principles.

Barrier protected bike lanes- Barrier protected bike lanes are dedicated lanes for bicycle travel that are separated from automobile traffic by a physical barrier such as parked cars, short posts, concrete curbs, or landscaped medians.

Circular economy- A circular economy is an economy which reduces waste by keeping resources in use for as long as possible rather than immediately sending them landfills. This approach allows society to get the maximum value from resources by recovering and reusing materials thus reducing emissions related to transport and decomposition.

Clean renewable energy- Clean renewable energy includes natural energy sources such as solar, wind, hydro, and geothermal, which do not have short- or long-term negative environmental impacts.

Climate change- Climate change is the significant change in weather patterns that continue over multiple decades or longer. Effects include changes in precipitation, increases or decreases in temperature, duration, frequency, and intensity of extreme weather events.

Community renewables- Community renewables refer to a renewable energy installation with multiple owners or subscribers. This model is helpful when a subscriber cannot install renewable energy on a property such as renters or those with insufficient solar capacity on their property.

Cumulative burden- The cumulative burden of climate change is a combination of exposure to pollution, extreme weather events, and other factors that can negatively contribute to these problems. Such factors include limited access to healthcare and healthy foods, poor housing quality, and lack of open green spaces. Social stressors and preexisting health conditions in frontline communities can also negatively impact environmental risks.

Electrification- Electrification refers to transitioning away from direct fossil fuel combustion in equipment and vehicles by replacing fossil-fuel powered equipment with alternatives that run on electricity.

Embodied carbon- Embodied carbon is the carbon footprint of a material. Embodied carbon considers the environmental impact of materials throughout the supply chain as well as manufacturing and transportation processes. Construction materials such as steel and concrete are high in embodied carbon. Embodied carbon can be reduced by reusing and recycling materials.

Energy burden- Energy burden is the percentage of household income spent on energy costs such as utility bills. According to the U.S. Department of Energy, the energy burden for low-income households is three times higher than for non-low-income households.

Equity- The City of Chicago defines equity as both an outcome and a process that results in fair and just access to opportunity and resources that provide everyone the ability to thrive.

Freight fleet- A freight fleet is a small or large number of vehicles operating under the same ownership to transport goods by truck, train, ship, or aircraft, as in the transportation of consumer goods.

Frontline communities- Frontline communities are those that experience the most immediate and worst impacts of climate change including extreme weather events and cumulative burdens. They are typically communities of color, Indigenous communities, and low-income income communities.

Mitigation- Mitigation refers to methods for reducing the human impact on the environment, specifically climate systems, including strategies to reduce greenhouse gas emissions, such as energy efficiency, and methods of capturing carbon, such as planting trees.

Nature-based climate solutions - Nature-based solutions (NBS) are actions that conserve or restore ecosystems or improve land management practices.

Net-zero- Net-zero refers to the balance of remaining emissions after climate action with removal and permanent storage of carbon from the atmosphere.

Resilience- Resilience is the ability to anticipate, prepare for, respond to, and recover from the impacts of climate change. These impacts include extreme weather events, flooding, and sea level rise, as well as the various social and economic impacts of such shocks and stresses.

Ride hail- Ride hailing is when riders hire a car and driver on a short-term basis to take them to a specified destination. Ride hailing includes taxi services as well online ride-hailing platforms such as Uber and Lyft.

Transit- Transit is a system of local transportation such as buses and trains used by people to commute to work, school, entertainment, etc. It is distinct from personal vehicular and long-distance travel.

Transportation- The term transportation includes transit, private vehicles, ride-hailing services, and freight.

Underserved- An underserved population or community is one that has limited access to health care and other types of services. People who are underserved face economic and social barriers which prevent them from accessing services or receiving the same quality of services as those who are not underserved.

Waste management- Waste management is the process of collecting, transporting, treating, and disposing of waste. It also involves reducing waste production through reuse and recycling.

CITY OF CHICAGO DEPARTMENTS AND SISTER AGENCIES:

- AIS, Department of Assets, Information and Services
- BACP, Business Affairs and Consumer Protection
- CCC, City Colleges of Chicago
- CDOT, Chicago Department of Transportation
- CDPH, Chicago Department of Public Health
- CHA, Chicago Housing Authority
- CDA, Chicago Department of Aviation
- CPD, Chicago Park District
- CPS, Chicago Public Schools
- CTA, Chicago Transit Authority
- DOH, Department of Housing
- DOB, Department of Buildings
- DPD, Department of Planning and Development
- DSS, Department of Streets and Sanitation
- DWM, Department of Water Management
- OEMC, Office of Emergency Management and Communications
- PBC, Public Building Commission

VISION, PRINCIPLES AND OBJECTIVES: LEADING WITH JUSTICE AND EQUITY

As greenhouse gas (GHG) emissions rise, changes in climate will continue to accelerate and pose greater risks to our health, economy, and general livelihoods. Like other public health threats, the climate crisis has a greater

impact on certain populations. Populations that are most vulnerable to climate impacts include health-compromised individuals, older adults, pregnant individuals, children, individuals with less income stability, communities located closer to sources of pollution, and communities with limited access to goods, social services and other resources. Some of these vulnerabilities are the result of harmful policies of discrimination and underinvestment such as redlining or extractive economic practices. Therefore, to better serve communities that disproportionately experience the chronic stress of the changing climate and the shocks of extreme weather events, the 2022 CAP anchors all climate strategies with the objective to create a more just and equitable city.

Alongside aggressive carbon emission reduction investments, governments must intentionally address and prevent furthering the legacy of social injustices. In practice, this means investing in climate actions that solve the priorities of frontline and overburdened communities, and using climate-related investments to drive new opportunities and benefits to those most at risk of impact or further burden. Due to the complexity of the climate crisis and the different ways impacts are experienced, it is imperative that the issue is approached comprehensively through multiple angles and points of view. Addressing the climate crisis holistically furthermore requires interconnected strategies and solutions that work together and get at root causes.

The 2022 CAP is built around climate actions that deliver multiple, meaningful benefits to individual Chicagoans and our communities while also reducing emissions. These "co-benefits" include: 1. Economic inclusion and savings; 2. Reduced pollution burden; 3. Access to utilities and public services; 4. Community health and resiliency. Actions that deliver "co-benefits" in a number of categories, described below, form the backbone of a new era of climate action in Chicago.

Economic inclusion and savings

The transition to a clean energy economy, the City will explore pathways that deliver meaningful benefits to individual Chicagoans and their communities. There is an opportunity to better connect residents to resources and services to save money by saving energy; to better understand and address barriers to owning clean energy power and storage; to modernize procurement and workforce development strategies to stimulate greater inclusion and diversity; and to expand the clean energy labor force. To realize these benefits locally, the CAP aims to retrofit a large portion of the City's residential buildings and enact meaningful updates to the City's building codes and standards. In both domains, the goal is to use less energy and to get energy from cleaner sources. The financial benefits to low-income households can come in multiple forms. Lower monthly utility costs increase household savings, job training provides economic upward mobility, and growth of the clean-energy economy provides access to new forms of business ownership and employment in the fields of community education and services, building efficiency, electrification, and solar installation.

Reduced pollution burden

Fossil fuel combustion causes harm beyond climate change. Diesel- and gas-powered vehicles contribute to pollution burden along busy roadways. Waste transport and processing heightens pollution in adjacent neighborhoods. Many gas-powered furnaces and cookstoves create unhealthy air in homes. The CAP promotes actions that go beyond reducing greenhouse gases to also preventing the local air pollution that contributes to asthma and other health issues. Because frontline populations have higher exposure to these pollutants, a commitment to advancing environmental justice requires addressing a range of issues: more circular waste practices to divert waste from landfills and pollution-heavy processing; the electrification of municipal, commercial, and industrial fleets; and providing affordable access to clean renewable energy and related technologies like electric vehicles.

Equitable access to critical infrastructure

Many climate actions require adoption of new technology, with up-front costs that can be out of reach for low- and moderate- income households. Without equitable access to clean energy, clean transit, and the broadband networks that enable full participation in today's economy, climate actions have the potential to increase disparities between low- and high-income households. To address this potential adverse effect, the CAP prioritizes actions and investments that ensure that no Chicagoan is left behind in the transition to cleaner technologies.

Community health and resiliency

Taken together, climate actions shaped through the lens of equity and justice can reduce the quality-of-life disparities that persist across US cities, including Chicago. To be considered successful, the actions in the CAP must not only reduce GHG emissions but also improve health and quality-of-life indicators. These include reduced levels of energy burden; improved water, soil, and air quality; and easy access to transit and healthy food. The CAP supports the vision of a future in which zip code is no longer a determinant of life expectancy in our City, but instead we are equally protected from and sufficiently prepared to bounce back from chronic health problems, heat waves, power outages, and flash floods. Nature-based climate solutions (NBS) are actions that conserve or restore ecosystems or improve land management practices. These solutions also store carbon and are key to balancing the carbon that is emitted throughout the City. NBS also enhance economic, social, and environmental vitality to improve community well-being and resiliency. The CAP integrates NBS across each pillar of climate action.

EVALUATING FOR BALANCE AND SOCIAL IMPACT

Leading with justice and equity in climate action requires that actions deliver measured improvements for communities. Systems of accountability must expand to reflect both social impact and emissions outcomes. In practice, this means working more closely with community networks to develop new systems for implementation, monitoring, and evaluation. Together, there can be a better understanding of social impact and effective program improvements. The City and partners developed the mitigation pillars and initiatives in this plan to meet all five of the following criteria:

Equitable: Each pillar aims to maximize benefits and minimize burdens on marginalized communities, alleviate resource disparities, and respond to community vulnerability and resiliency.

Balanced: The plan balances the need for local impact and global leadership with strategies that support connecting and strengthening Chicago communities alongside ambitious mitigation and adaptation strategies. Similarly, the CAP elevates the need to invest in both NBS and technology for holistic progress.

Realistic: Initiatives are timely and actionable within the City's legal and functional sphere of control. They are cost-effective and fiscally responsible, relying on strong financial mechanisms. Most importantly, each initiative is measurable.

Ambitious: Initiatives are responsive to the climate crisis. They incorporate the most up-to-date climate science and recognize the urgency of both immediate and game-changing actions that significantly reduce emissions and improve the lives of Chicagoans.

Adaptive: Initiatives leave flexibility to accommodate technological, political, and cultural shifts during the life of the CAP's implementation.

CLIMATE FINANCING AND DELIVERY CAPACITY

In 2008, Chicago became the first major American city to create a comprehensive climate action plan. The goals within the plan aimed to reduce citywide emissions 25% by 2020 and 80% by 2050 from 1990 levels. In 2011, Chicago updated its climate action strategies in the Chicago Sustainability Agenda 2015. The report sharpened strategies to accelerate efforts to reach the goals set forth in the 2008 CAP. Since 2011, a number of building-block policies and initiatives were launched to build greater capacity to deliver on the City's climate targets. To learn more, click on the initiatives below or visit chicago.gov/sustainability.

- Benchmarking Ordinance, 2013: This ordinance supports greater transparency on energy usage across the building sector, existing municipal, commercial, and residential buildings 50,000 square feet and larger were called to track energy use, report to the City annually, and verify data accuracy every three years.
- Chicago Solar Express, 2013: This program simplified the administrative process required to install rooftop solar.
- Drive Clean Chicago, 2014: This program provided funding to support Chicago fleet operators and businesses for the adoption of clean vehicles.
- Sustainable Development Policy, 2016: This policy requires development projects that receive financial assistance or special approvals from the City include sustainable elements.

Despite these efforts, the City fell short of its 2020 reduction target primarily due to insufficient funding, a limited labor force, and the discontinued coordination of climate targets and accountabilities across City departments. This shortfall has not been unique to Chicago. Many cities that established early CAPs have struggled to allocate the necessary finances, staff capacity, or policy to address the climate crisis.

The calls for bold climate action continue to resonate globally across all demographics, and governments are responding. In 2015, to drive greater global coordination and ambition, 195 countries and the European Union adopted the Paris Agreement, establishing a legally binding global target to limit global warming preferably to 1.5° Celsius. In 2017, Chicago joined more than 200 cities in formally adopting the guidelines of the Paris Agreement despite the lack of federal leadership. On September 20, 2019, millions of youths protested for immediate climate action in more than 800 marches around the world. Youth leadership in Chicago led to the formal declaration of a climate emergency and led thousands of young Chicagoans to demand greater leadership from the state legislature as well. In 2021, the US government passed the Infrastructure Investment and Jobs Act. The law provides federal funding to deliver carbon-free power ($75 billion) and support resilience ($47 billion) by improving public transportation, address pollution in overburdened communities, rebuild roads and bridges, and enable electric vehicles. The same year, the Climate and Equitable Jobs Act (CEJA) became law in Illinois, committing the state to deliver 100% carbon-free power by 2045 and 100% clean energy by 2050.

In October 2021, Chicago's City Council approved $200 million for climate resiliency and mitigation, as part of Mayor Lori Lightfoot's $2.5 billion Chicago Recovery Plan. This historic level of investment toward climate action will provide funding for resilient infrastructure and green workforce development opportunities. Additional complementary investments will be made in affordable housing ($157.4 million); health and wellness ($108 million); environmental justice ($86.8 million); community climate investments ($101.3 million); community development ($166 million); and small business and workforce support ($87 million). In addition to these newly available resources, the Build Back Better framework proposed by the US Congress would further enable the conditions needed to successfully deliver Chicago's CAP.

For the first time, awareness, expertise, and funding are aligned to support ambitious climate action in Chicago. The City has allocated budget and operational capacity to achieve the first next steps of the CAP and demonstrate success to solidify climate action as a standard line item in future annual budgets. The initiatives in the tables below are fully funded.

Chicago Recovery Plan funding overlap with Chicago's 2022 Climate Action Plan (total climate funding of $188M)

PROJECT NAME	ALLOCATED BUDGET	INTENDED DELIVERABLES	EXPECTED CO-BENEFITS
Decarbonize Affordable Multi-Family Buildings	$6M	Goal of retrofitting 200 multifamily affordable housing units	Increased household savings; thermal comfort; economic inclusion; improved air quality; increased resiliency to extreme weather.
LMI Housing Retrofits	$15M	Goal of retrofitting 250 LMI homes	
Neighborhood Power Project expansion	$10M	Complete deep retrofits at least 10 community anchor buildings	
Library Power Project	$5M	Enable and/or install solar power on 5 library roofs	Improved grid reliability; increased household savings
Community Solar on Industrial Roofs	$5M	Generate solar energy to power at least 1,000 homes via community solar on industrial roofs	
Expand canopy coverage	$46M	Plant 75,000 trees over 5 years in underserved community areas	Reduced pollution burden; increased home value (3-15%); improved thermal comfort
Community green infrastructure investments	$5M	Implement green alleys and develop several green infrastructure flood mitigation projects	Reduce flooding and sewage overflow; increased home value (3-15%)
Community Composting Pilot	$450k	Install 5 new community compost collection hubs	Reduce pollution burden concentrations, improve soil quality

City fleet and building decarbonization	$8.3M	Invest in municipal fleet electrification combined with EV charging;	Reduces emissions from City operations; procurement opportunities for MBE/DBE/WBEs.
Low carbon mobility projects	$10M	Expansion of bike and micromobiltiy infrastructure and walkability investments in priority communities	Reduced emissions from avoided vehicle trips; increased personal mobility; procurement opportunities for MBE/DBE/WBEs.
Air quality monitoring and land remediation project	$24M	Investment in a Citywide air monitoring network and partial remediation of the former Schroud superfund site.	Data transparency for local air pollution monitoring by residents; procurement opportunities for MBE/DBE/WBEs.

In addition to the City's historic Chicago Recovery Plan climate investments, there are several existing, expanded, and new sources of funding that can help Chicago meet its climate goals. These sources exist at the local, state and federal levels. Some examples include:

- Energy efficiency building improvements and repairs through TIF-funded Chicago Small Business Improvement Funds
- Programs created or expanded by Illinois' Clean Energy Jobs Act covering a variety of areas such as clean energy workforce development, solar investments in Illinois' BIPOC, low income, and environmental justice communities, and transportation electrification
- Programs created or expanded by the federal Infrastructure Investment and Jobs Act (IIJA) and implemented by US Environmental Protection Agency, US Department of Transportation, and US Department of Energy.
- Utility energy efficiency programs funded by ratepayers. Starting in 2022, Chicago's current electric distribution utility will implement an energy efficiency program with a total budget likely exceeding $400M per year (for its full Northern Illinois service territory), with significant program spending focused on low- and moderate-income programs as well as programs focused on public sector energy efficiency and electrification switching, among other measures.

This is an exciting moment for Chicago to pursue expanded funding through sources such as the above but it also underscores the imperative of engaging Chicagoans to update the Climate Action Plan now.

PLAN DEVELOPMENT PROCESS AND TIMELINE

Fourteen years after our first CAP, we face a renewed energy for bold initiatives. In comparison to previous years, market prices for renewable electricity are cheaper, clean energy funding has increased, and implementation capacity has grown. While economic trends and policies continue to support climate and infrastructure investments, the 2022 CAP seeks to reflect the current needs and ambitions of our communities.

Beginning in Summer 2021, the Office of the Mayor hosted listening sessions to seek input from residents, community-based organizations, local non-profits, industry associations, and other partners. The feedback from these sessions drove the inclusion of many initiatives in the CAP, particularly sections related to equity and justice. Throughout the Fall/Winter 2021, City departments and sister agencies offered feedback on CAP strategies, actions, and targets. The insights helped to ensure that the 2022 CAP goals are both ambitious and attainable. See the above list of external partners who advised on the CAP draft and page 8 for the internal departments involved in the process.

In January 2022, the Office of the Mayor hosted two community-wide town halls drawing 150+ attendees and launched two community surveys to assess what issues matter most to Chicagoans. In an effort to avoid excessive surveying of community partners and residents, community feedback from other City-led planning initiatives such as the eTOD Policy Plan (2020), We Will Chicago (2021-present), and the 2021 Budget Engagement Tours, were consulted.

External Partners

Blacks In Green	Friends of the Park	Neighbors for Environmental Justice	Southeast Environmental Taskforce
Chicago Lawyers Committee for Civil Rights	Illinois Youth Climate Movement	NeighborSpace	The Morton Arboretum
Chicago Environmental Legal Clinic	Illinois Environmental Council	Office of Modern Composition	The Nature Conservancy
Elevate	Metropolitan Planning Council	Openlands	University of Illinois at Urbana Champaign
Environmental Law and Policy Center	Metropolitan Mayor's Caucus	People for Community Recovery	

THANK YOU

to everyone who has contributed to the CAP. From interactive virtual town halls, two online surveys, and facilitated conversations with community partners, as of February 15th, about 1,800 Chicagoans from 135+ neighborhoods have shared with us their climate priorities. We also acknowledge due to COVID-19, and the Omicron variant in particular, partner organizations found it difficult to connect with constituents in January-February 2022. While we sought greater in-person engagement, we will continue to leverage these partnerships moving forward to maximize accountability and successful plan implementation.

What Matters to You:

In collaboration with local urban planning and public engagement firm MUSE Community + Design, the City developed a survey to hear from Chicagoans on what they would like to see in the CAP. The survey covered four goals of the CAP: 100% renewable energy, increase household savings, advance environmental justice, and

improve community health. Respondents ranked the level of importance of potential approaches and outcomes in achieving these goals.

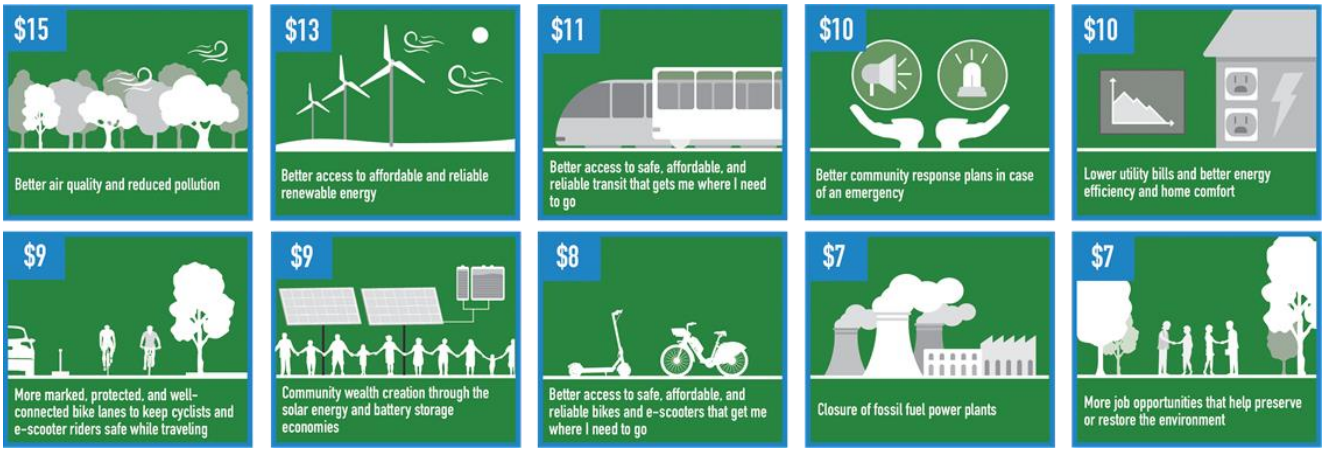
Total Responses (as of Feb 15, 2022): 1,275 survey submissions

ACTION PILLARS	WHAT MATTERS MOST?
100% Renewable Energy	Make it easy for families and businesses to sign up for renewable energy (73% of respondents)
Household Savings	Better access to renewable energy (71% of respondents)
Environmental Justice	Better access to reliable transit (82% of respondents)
Community Health	Better access to reliable transit (78% of respondents)

Funding Your Future:

In collaboration with MUSE Community + Design, the City also developed a survey to hear from Chicagoans how they value ten significant climate outcomes. Having $100 to spend on these ten climate outcomes, Chicagoans were tasked with funding the outcomes that would most improve their quality of life. The results from the submissions prioritized better air quality and reduced pollution and better access to affordable and reliable renewable energy.

Total Responses (as of Feb 15, 2022): 314 survey submissions



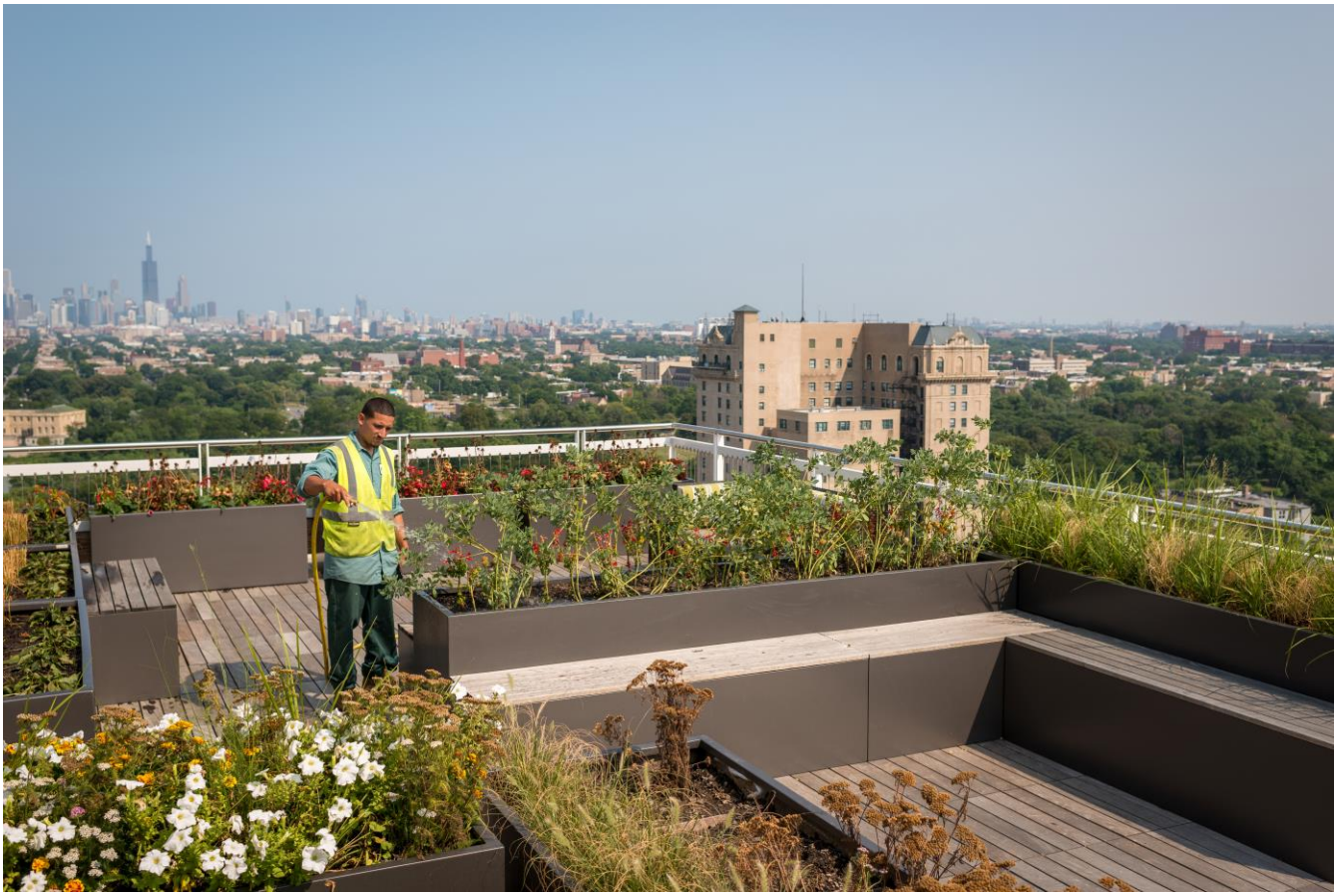
Chicagoans are passionate about better air quality, improved access to renewable energy, and better access to reliable transit, and the goals of increasing household savings, and improving community health and

environmental justice. Survey responses and all other forms of public feedback directly influenced the selection of CAP actions by prioritizing initiatives with the greatest community benefits.

What we heard:

- “We ought to prioritize benefits to community members who have been marginalized historically.”
- “We need to restore our canopy with diverse and native trees and plants. This will beautify neighborhoods and provide crucial habitat for endangered species and clean our air”
- “Investing in clean energy will reduce bills, reduce air pollution, and reduce the risk of climate disasters in the future. It's a win-win-win.”
- “Rebalancing planning decisions to heavily favor mass transit can reshape our city for the better."
- “Community ownership is important; we are all impacted by climate change and so we all need to feel part of the solution.”

The City will need ongoing support and engagement from across our communities to determine meaningful metrics in support of the CAP’s goals. Expanding existing partnerships and creating new ones will foster innovation, speed up progress, and give all Chicagoans a voice in shaping our future.



GHG REDUCTION TARGETS

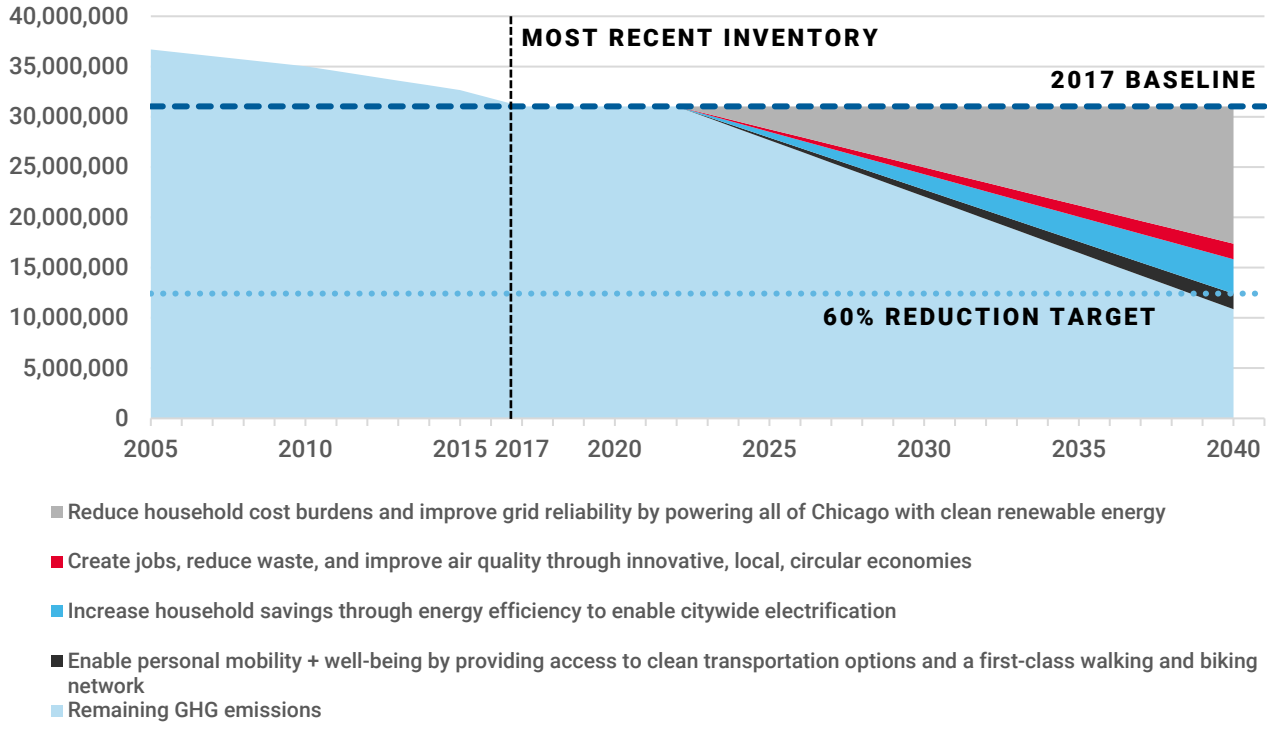
CHICAGO'S GHG REDUCTION TARGETS

The 2022 CAP aims to chart an equitable path to reduce Chicago's GHG emissions by a minimum of 60% by 2040. Following the principles defined in this plan, this pathway prioritizes improving the lives of all Chicagoans by promoting environmental justice, generating household savings, and improving community health. transitioning away from fossil fuel dependency and ensuring that all Chicago communities are prepared for the undeniable impacts of climate change, by 2040.

Outlined below are Chicago's GHG reduction targets based on mitigation pillars:

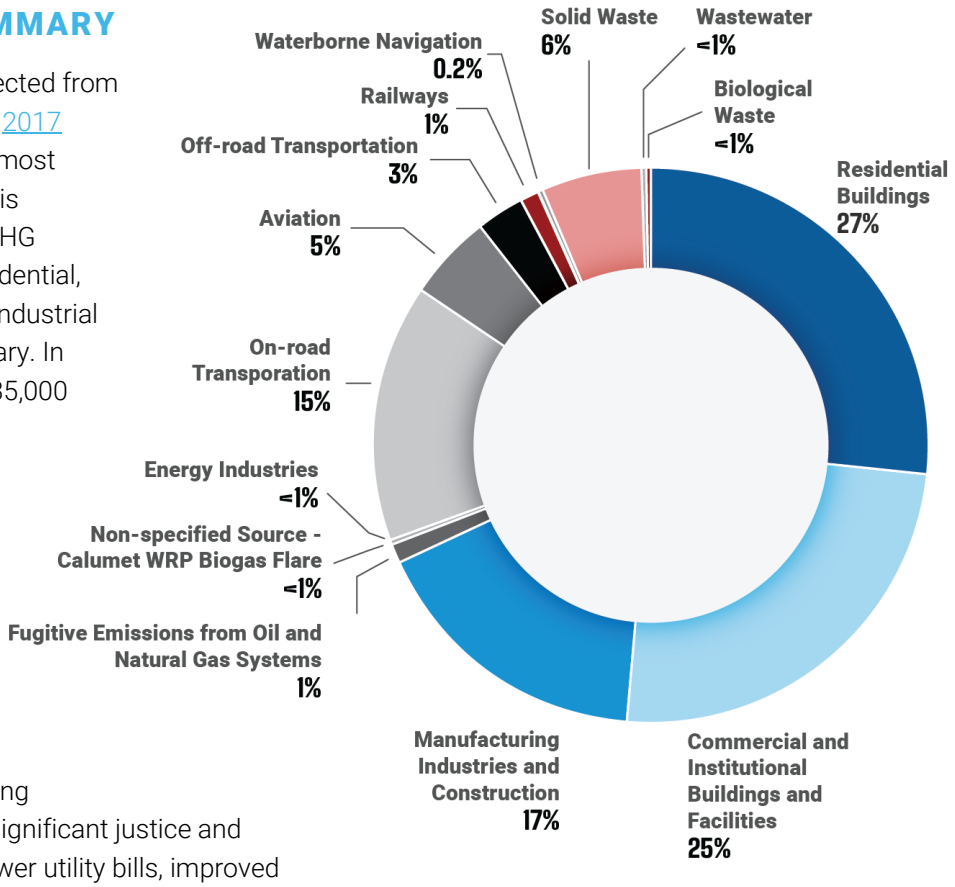
PILLAR 1	Increase household savings and enabling citywide electrification through energy efficiency: 9% reduction
PILLAR 2	Create jobs, develop circular economies, and improve air quality by pioneering clean last-mile logistics: 5% reduction
PILLAR 3	Enable personal mobility and well-being by providing access to clean transport options and a first-class walking and biking network: 2% reduction
PILLAR 4	Reduce household cost burdens and improve grid reliability by powering Chicago with clean renewable energy: 42% reduction
PILLAR 5	Reduce disparities in quality-of-life metrics across communities by integrating health and equity criteria in decision-making: Pillar 5 actions do not directly reduce GHG emissions, however; they enable co-benefits for individual Chicagoans

CHICAGO GHG EMISSIONS REDUCTION TARGET PATHWAY



GHG INVENTORY SUMMARY

The emissions reductions expected from the actions in this plan use the 2017 GHG Emissions Inventory, the most recent report, as a baseline. This inventory estimates the total GHG emissions generated from residential, commercial, institutional, and industrial activities within the city boundary. In 2017, Chicago generated 31,035,000 metric tons of carbon dioxide equivalent (mtCO2e) from the following activities:



Building decarbonization provides the greatest opportunity to reduce the City's emissions. Buildings account for approximately 70% of total citywide emissions. Building decarbonization also delivers significant justice and equity co-benefits, including lower utility bills, improved air quality, and improved resident safety and thermal comfort.

THE ROLE OF OFFSETS

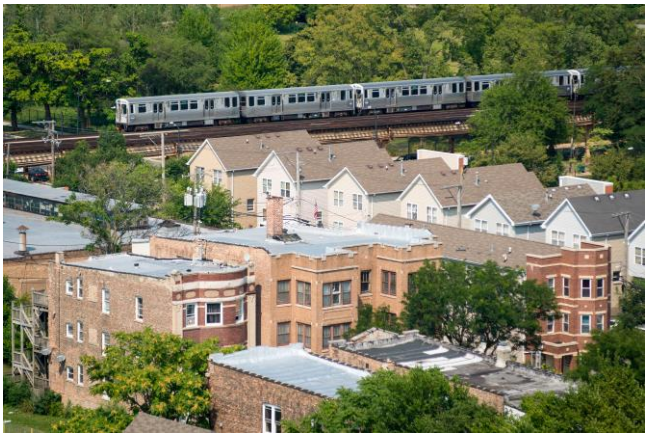
Each greenhouse gas has different climate warming effects. Many gases, such as methane and nitrous oxide, warm the climate many times more than carbon dioxide. For simplicity and consistency, GHG inventories convert greenhouse gases to a common measurement called "carbon dioxide equivalent (CO2-e)." This is the amount of CO2 that would result in the same warming as the measured amount of another greenhouse gas. For example, methane warms the climate 28 times more than carbon dioxide. 1 metric ton of methane is expressed as 28 metric tons of carbon dioxide equivalent

Carbon offsets represent carbon reduced, avoided, or removed from the atmosphere. Cities, companies, and individuals can purchase carbon offset certificates from projects located elsewhere to compensate for their own GHG emissions. Independent third parties assess and monitor offset projects to verify their credibility.

Chicago will not count offset credits toward its 60% GHG reduction goal achievement. Furthermore, the City will reduce its own emissions before taking action beyond its borders. Slowing and ultimately reversing climate change requires reaching a state of net-zero GHG emissions. Net-zero refers to the

balance of remaining emissions after climate action with removal and permanent storage of carbon from the atmosphere. Achieving the 60% reduction target puts Chicago on a path toward net-zero, but more work will be needed after we achieve the goal.

In the coming years, the City will evaluate the potential role of carbon offsets to reach net-zero and will develop guidelines to inform future offset purchases. In parallel, the City will assess options to remove and store carbon within City limits, including urban forestry and soil management. This assessment will include the evaluation of climate resiliency benefits, support for historically overburdened communities, and other environmental justice impacts.



CLIMATE ACTION STRATEGIES

HOW TO READ THIS PLAN

The initiatives in this plan are organized into three levels: pillars, strategies, and actions. The five pillars support the high-level goals of the plan:

PILLAR 1	Increase household savings;
PILLAR 2	Reduce waste and create jobs;
PILLAR 3	Enable personal mobility and improve air quality;
PILLAR 4	Enable Chicago's clean energy future; and
PILLAR 5	Strengthen communities and protect health.

Each pillar includes multiple strategies to achieve it. These strategies call for specific, quantifiable actions – the most granular initiatives in the plan. This hierarchy provides specific measures of success, impact, and accountability. Each pillar, strategy, and action is described in detail following the below table.

PILLAR	STRATEGY	ACTION
1 Increase Household Savings	1. Retrofit buildings	Retrofit 20% of total 5+ unit residential buildings by 2030
		Retrofit 20% of total industrial buildings by 2030
		Retrofit 90% of total City-owned and Sister Agency-owned buildings by 2035
		Retrofit 20% of total less than 4-unit residential buildings by 2030, prioritizing low- or moderate-income households
		Retrofit 20% of total commercial buildings by 2035
	2. Enable existing building and personal vehicle electrification	Electrify 30% of total existing residential buildings by 2035
		Electrify 90% of total existing City-owned buildings by 2035
		Electrify 20% of total existing industrial buildings by 2035
		Electrify 10% of total existing commercial buildings by 2035
		Enable 2,500 new public passenger EV charging stations by 2035
	3. Align building codes and standards with climate best practices	Enable green roofs and walls, tree planting, and other vegetative cover by 2023
		Enable electrified renovations and new construction by 2035
		Enable net-zero carbon construction by 2040

PILLAR	STRATEGY	ACTION
2 **Reduce Waste and Create Jobs**	1. Divert waste	Divert 90% of commercial and industrial waste from landfills and incineration by 2030 Divert 75% of construction and demolition waste from landfills and incineration by 2030 Divert 90% of residential waste from landfills and incineration by 2040 Enable equitable waste source prevention by 2030 Enable community-wide organic waste collection and decomposition by 2040 Enable building design for disassembly and reuse by 2035
	2. Electrify commercial fleets	Enable 100% electrification of delivery fleets by 2035 Enable freight-EV enabled loading docks at new commercial and industrial buildings by 2025 and existing commercial and industrial buildings by 2030
3 **Enable Personal Mobility and Improve Air Quality**	1. Increase CTA reliability, frequency, and speed and update land use policies to encourage more housing and businesses near transit	Increase CTA ridership by 20% by 2030 to reduce fossil fuel-based traffic Update land use policies to encourage sustainable development that brings more households and businesses near transit by 2022 Enable commuter benefits for Chicago workers by 2024
	2. Electrify transit options	Electrify CTA bus fleet by 2040
	3. Electrify fleets	Electrify 100% of the City's fleet by 2035 Support equitable electrification of ride hail and taxi fleets by 2030
	4. Invest in infrastructure, policies and programs that enable walking, biking, or transit as viable options for all trips	Invest in infrastructure, policies and programs that enable Chicagoans to walk, bike, take public transit, or use shared micromobility for 45% of all trips by 2040 Expand high-quality and low-stress on-street bikeways and off-street trails to reduce total annual fossil fuel-based traffic by 50M vehicle miles per year Increase Divvy and shared micromobility trips 30% by 2030 reducing fossil-based traffic by 2.2M miles per year Update land use policies to ensure new development prioritizes street safety and accessibility, especially near transit, by 2022

PILLAR	STRATEGY	ACTION
4 Enable Chicago's Clean Energy Future	1.100% clean renewable energy	Install 5 MW of community-owned solar projects by 2025 Aggregate 5,000 MW of clean renewable energy within a 250-mile radius of Chicago by 2030 Increase community renewables subscriptions to achieve 25% subscribed by low-income and/or EJ low-income residents by 2030 Increase Chicago-based community renewables to 20 MW by 2025 Install 30 MW of clean renewable energy projects on City property by 2030 Achieve 100% clean renewable energy community-wide by 2035
	2. Enable interconnection and storage	Ensure 150 MW of energy storage by 2025 Invest in 1,000 MW of demand response by 2024, and 3,000 MW by 2035
	3. Decommission fossil power	Decommission use of fossil-fuel plants by 2025
5 Strengthen Communities and Protect Health	1. Collect relevant data	Report energy burden by community area by 2023 Develop a water and soil quality measurement and mitigation strategy by 2023 Establish a robust outdoor air quality monitoring network by 2025
	2. Enable data driven decision-making	Integrate health and equity criteria with all City decision-making by 2022 Establish quality of life metrics and measure per community area by 2023 Update and publish community resilience metrics by 2022 Publish just transition metrics by 2022

PILLAR 1 Increase household savings

All Chicagoans rely on buildings as a base for their businesses, homes, and places to gather. The COVID-19 pandemic highlighted how important efficient, healthy homes and properties are for people's emotional, physical, and economic health. In Chicago, most buildings run on electricity and natural gas.

We will not be able to achieve our climate goals without an aggressive approach to reduce overall building energy use and carbon emissions. In 2017, energy use in Chicago's buildings accounted for 70% of the City's carbon footprint. From lighting and appliance updates to weatherization retrofits, increasing energy efficiency helps to reduce this footprint. Electrifying building systems and powering them with renewable electricity will further reduce building GHG emissions. The City aims to power buildings community-wide with 100% renewable electricity by 2035.

Aggressively accelerating energy efficiency in new and existing buildings, along with rapid building electrification, is needed to achieve the ambitious goals set in this Climate Action Plan. The proposed strategies will tackle broader linked issues including energy burden, housing affordability, and public health. Climate resilient and energy efficient buildings use less energy, save money on utility bills, reduce negative health outcomes, and protect us during extreme weather events. We plan to support these strategies with complementary policy reforms, empowering building owners to take action by reducing implementation barriers.

As the cost of energy efficient and electrified buildings declines, programs must be designed and implemented to ensure renters, homeowners, businesses, and building owners are adequately supported through the necessary transition. At the core of the CAP's equitable building decarbonization proposals, all Chicagoans should benefit from building improvements without adding to the existing concerns of rising rents and displacement.

NATURE BASED SOLUTIONS

- Nearby trees and vegetated roofs and walls can reduce building energy use by keeping interiors cooler, reduce stormwater runoff, and improve air quality
- Minimizing hard pavement and maximizing vegetation enables stormwater infiltration and minimizes heat islands
- Continued enforcement of Chicago's landscape ordinance that contains provisions for tree protection during construction, especially of utility and other public right of way improvements, helps protect existing trees

STRATEGY 1: RETROFIT BUILDINGS

Chicago's residential, commercial, and industrial buildings account for nearly 70% of the City's carbon footprint. Reducing building energy use through efficiency will reduce the City's greenhouse gas emissions, save residents and businesses money, and improve the City's resiliency to climate shocks and stressors. There are many readily available upgrade technologies that delivery reliable efficiency outcomes within reasonable payback periods, making scaled implementation of available technology a priority for the many buildings that have not yet undergone retrofits.

Retrofits for most building types can include weatherization, smart thermostats, lighting and appliance replacements, and heating, ventilation and cooling (HVAC) equipment upgrades. Industrial buildings that use

energy for manufacturing must explore efficiency opportunities specific to their specialized equipment and processes. It is important to prioritize energy efficiency retrofits prior to electrification and the transition to renewable energy to lower overall costs and make buildings healthier and more comfortable for people. Efficiency enables the transition to 100% renewable energy by reducing the amount of new wind and solar required to meet all energy needs.

When strategically designed and executed, workforce development programs related to energy efficiency and retrofit investments can create new jobs for priority populations, expanding the 80,000 clean energy job ecosystem in the Chicagoland region.

Known Hurdles

- Upfront cost barriers for comprehensive retrofits
- Vendor capabilities, available vendors, and vendor contracting support
- Variability of industrial building uses
- Concerns about equitable benefits of on-bill financing mechanisms

Performance Metrics

- Total number of trained professionals
- Number and percent of buildings retrofit
- Average utility bill reductions

First Next Steps

- Conduct a baseline retrofit assessment to determine building typologies and community areas for prioritization
- Conduct a landscape analysis of workforce development opportunities and barriers
- Work with frontline community leaders to prioritize buildings for energy efficiency retrofits

ACTION I: RETROFIT 20% OF TOTAL 5+ UNIT RESIDENTIAL BUILDINGS BY 2030

This action will bring improved efficiency and living conditions to nearly 140,000 units in large multifamily buildings. Utility costs are among the largest operating expenses for multifamily buildings in Chicago, and this portion of Chicago's housing stock accounted for 12.9% of the City's total carbon footprint in 2017. Large savings from retrofits such as weatherization (insulation and air sealing), lighting and appliance upgrades, smart thermostat installations, and high-efficiency heating and cooling equipment are well-established, though paying for these improvements can be an obstacle for landlords. Particularly for building owners in underserved communities, it is important to address how unfair appraisals, limited access to capital, and other legacy forces of redlining reinforce barriers to energy efficiency investments. For renters, efficiency retrofits can help preserve affordable housing when thoughtfully planned, though also have the potential to drive rent increases

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure

CITY PARTNERS

DOH, DOB, DPD, CHA

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS

- Prioritize designated EJ areas, while incorporating local air pollution levels
- Monitor post-retrofit performance to ensure achievement of projected savings and benefits
- Remediate non-energy issues such as lead, mold, and indoor air quality
- Continue to expand access to affordable housing
- Prioritize support and expansion of MBE, WBE, DBE, and BEPD contracts
- Include protections from predatory financing
- Maximize savings passed on to renters

ACTION II: RETROFIT 20% OF TOTAL INDUSTRIAL BUILDINGS BY 2030

Industrial buildings use large amounts of energy for manufacturing and other processes, causing 16.6% of the City's 2017 carbon footprint. The same energy-using industrial processes can also cause other types of air pollution that directly affect the health of neighbors, making it important to consider how retrofits can address both carbon and overall pollution. Unlike other building types, energy retrofits are often highly specific to each industrial facility and require careful analysis and engineering.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DPD, BACP, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS

- Prioritize designated EJ areas, while incorporating local air pollution levels
- Monitor post-retrofit performance to ensure achievement of projected savings and benefits
- Remediate non-energy issues such as lead, mold, and indoor air quality
- Prioritize support and expansion of MBE, WBE, DBE, and BEPD contracts

ACTION III: RETROFIT 90% OF TOTAL CITY-OWNED AND SISTER AGENCY BUILDINGS BY 2035

City and Sister agency buildings include public schools, community centers, libraries, fire and police stations, offices and other buildings that serve the public. Although they only caused 1% of the City's total carbon footprint in 2017, it is important for the City to lead by example and bring energy efficiency technology to its own facilities. This action will expand upon earlier investments in energy efficiency by the City and Sister Agencies, including the Retrofit One upgrades pursued in 60 buildings in 2018, and the complete replacement of all streetlights with LED technology.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

AIS, DOB, CPL, CPS, CCC, CDOT, CDA, DWM, PBC, CTA, and Chicago Park District

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize EJ areas
- Utilize community-led decision-making
- Connect with job training and local economic development
- Prioritize support and expansion of MBE, WBE, DBE, and BEPD contracts
- Support expansion of retrofit and electrification workforce

ACTION IV: RETROFIT 20% OF TOTAL LESS THAN 4-UNIT RESIDENTIAL BUILDINGS BY 2030, PRIORITIZING LOW- OR MODERATE-INCOME HOUSEHOLDS

Smaller residential buildings, including the City's nearly 400,000 single family homes and small multifamily properties, caused 14% of the City's total carbon emissions in 2017. These households can benefit from the same types of retrofits that apply to larger residential buildings. Bundling simple updates like weatherization, lighting, and appliance upgrades with the conversion of furnaces, boilers, and air conditioners to advanced heat pump technology makes it realistic to cut energy use in half, even with Chicago's hot summers and cold winters. Most Chicagoans live in this type of building, making this retrofit action an important aspect of ensuring equitable access to the benefits of the clean energy transition.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DOH, DOB, DPD, City Treasurer (wealth building and education)

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Utilize community-led decision-making
- Prioritize EJ areas and local air pollution conditions
- Monitor post-retrofit performance to ensure achievement of project savings and benefits
- Guarantee savings are passed to renters
- Remediate non-energy issues such as lead, mold, and indoor air quality
- Expand access to affordable housing
- Connect with job training and local economic development
- Prioritize support and expansion of MBE, WBE, DBE, and BEPD contracts
- Support expansion of retrofit and electrification workforce

ACTION V: RETROFIT 20% OF TOTAL COMMERCIAL BUILDINGS BY 2035

Commercial buildings include offices, restaurants, and stores. These facilities accounted for 23.5% of the City's carbon footprint in 2017, or nearly as much as residential buildings of all sizes. Through programs like Retrofit Chicago and utility incentive programs, many large commercial buildings have already benefited from energy efficiency investments. Spreading proven efficiency practices to more of the City's commercial buildings will strengthen businesses while reducing cost and GHG emissions. LED lighting retrofits typically provide the fastest payback period, often within two years. Other retrofits appropriate to commercial buildings include heating, ventilation, and air condition (HVAC) upgrades, adding controls so that systems can be shut down when not in use, and carefully monitoring energy consumption for signs of waste or unusual usage.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Utilize community-led decision-making
- Prioritize EJ areas and local air pollution conditions

STRATEGY 2: ENABLE EXISTING BUILDING AND PERSONAL VEHICLE ELECTRIFICATION

Many City buildings use natural gas to run furnaces, boilers, hot water heaters, cooking ranges, and other equipment and appliances. Diesel is commonly used in the back-up generators that help maintain power if the electric grid is down. Most personal vehicles still use gasoline. Electrification refers to transitioning away from direct fossil fuel combustion in equipment and vehicles by replacing fossil-fuel powered equipment with alternatives that run on electricity. When paired with renewable electricity, equipment electrification significantly reduces GHG emissions. Beyond the carbon benefit, electrification is also important for improving air quality, including inside homes. Switching from gas to electric stoves, for example, results in much lower instances of children developing asthma symptoms. Because electric-powered equipment and vehicles are sometimes more expensive than fossil-fuel options, it is important to improve efficiency at the same time to make the transition affordable.

Known Hurdles

- Vendor capabilities, available vendors, and vendor contracting support
- Affordability protections
- Lack of scalable technology and system reliability concerns
- Buy America requirements for federal funding

First Next Steps

- Develop educational materials for communities
- Work with frontline community leaders to prioritize buildings for electrification
- Establish robust consumer protections
- Release charging station implementation priorities and plan

Performance Metrics

- Total number of trained professionals
- Total and percentage of buildings electrified
- Number and capacity of charging stations installed

ACTION I: ELECTRIFY 30% OF TOTAL EXISTING RESIDENTIAL BUILDINGS BY 2035

Residential building electrification is one of the most important climate actions Chicagoans can take that also provides immediate health benefits for households. To achieve this goal, the City and its private, non-profit, and public sector partners will support homeowners and landlords in installing new electric heat pumps for heating, cooling, and hot water. Electric resistance heat can complement heat pumps in cold weather, but most new heat pumps operate efficiently at extreme temperatures. Other residential electrification actions will include replacing existing stoves, dryers, and other appliances with electric technology. Weatherization and other efficiency measures should be in place in parallel to electrification to make energy bills affordable.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DOH, DOB, DPD, CHA, CDOT (utility work for electrification)

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Determine community needs and utilize community leadership
- Prioritize EJ areas and local air pollution
- Enabling residents to have voice heard on electrification goals
- Combine retrofits with electrification to ensure long-term affordability
- Pre-assess utility bill impact and subsidize bill increases for low-income households
- Ensure costs are not passed on to renters
- Protections from predatory financing
- Accessible resources on electrification goals and efficient appliance management

ACTION II: ELECTRIFY 90% OF TOTAL EXISTING CITY-OWNED BUILDINGS BY 2035

Because electrifying buildings requires new equipment and workforce techniques, the City can spur local capacity by transitioning most of its own buildings. City leadership in implementing building electrification will enable installers to invest in workforce training and technology partnerships, making it easier for private building owners to also transition to electric equipment.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DOB, DPD, AIS, CDA, DWM, PBC

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Determine community needs and utilize community leadership
- Prioritize EJ areas

ACTION III: ELECTRIFY 20% OF TOTAL EXISTING INDUSTRIAL BUILDINGS BY 2035

In industrial buildings, fuel-intense processes are often related to heat generation for drying, melting, or cracking materials. For industrial activities with very high heat requirements that go beyond 1,000 degrees Celsius, current electrification technologies are limited, but this level of heat is only needed for certain processes like the production of virgin steel, cement, and ceramics. For other process with lower temperature requirements and moderate HVAC needs, use of electric boilers, electric furnaces, heat pumps, and electric evaporation equipment are feasible. Helping industrial facility owners identify and invest in available equipment alternatives are key to achieving this strategy.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DOB, DPD, BACP (enforcement)

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Determine community needs and utilize community leadership
- Prioritize EJ areas
- Prioritize facilities with fuels that contribute to local air pollution, such as residual fuel oil and natural gas

ACTION IV: ELECTRIFY 10% OF TOTAL EXISTING COMMERCIAL BUILDINGS BY 2035

The ease of electrifying commercial buildings depends on many factors, including building size. Smaller commercial buildings can often follow a similar electrification strategy as residential buildings, where swapping appliance-sized equipment is straightforward. Medium- and large-sized commercial buildings with central heating systems face more complexity, including a potential need to upgrade electrical service to handle the added load, improve structural support for heavier equipment, and/or improve refrigerant management practices.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DOB, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Determine community needs and utilize community leadership
- Prioritize EJ areas

ACTION V: ENABLE 2,500 NEW PUBLIC PASSENGER EV CHARGING STATIONS BY 2035

Electric vehicles (EV) provide a clean mobility option for those in communities where a car is a necessity, provide significant cost savings to drivers due to lower operation costs and fuel savings, reduced street-level air pollution, and also lead to reduced GHG emissions if the charge source is powered with clean energy. Chicago will focus on increasing the adoption of electric vehicles among car owners by expanding and improving Chicago's charging infrastructure and ensuring that all communities have access to public EV charging. In coordination with private and public charger operators and building owners, Chicago will enable the installation of 2,500 new commercial-grade, Level 2 public passenger EV charging stations by 2035, with priority given to low- and middle-income communities. As EV uptake will not enable the City to provide safe, affordable and efficient transportation for all, the City will continue to prioritize investments in transit, walking, biking and shared mobility.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

CDOT, CTA, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Invest in community-designed and community-led programming and education
- Prioritize EJ areas
- Ensure equitable distribution of charging stations, including public areas, multifamily housing, and areas of interest

STRATEGY 3: ALIGN BUILDING CODES AND STANDARDS WITH CLIMATE BEST PRACTICES

To support Chicago's transition to a low-carbon future, the City must modernize its planning, zoning, and building codes. Retrofits can be expanded and accelerated by permitting codes related to electrifying buildings, and upon major renovations requiring greater energy efficiency, integrating renewable energy and electric vehicle charging, and improving resiliency. Codes and standards also present an opportunity to ensure new building construction is climate-change ready, which prevents the waste associated with retrofitting recently constructed buildings. City planning policies and regulations must be aligned with goals and priorities outlined in the CAP.

Known Hurdles

- Policy enforcement requires resources

First Next Steps

- Update the City's Sustainable Development policy
- Develop a Building Performance Standard policy, and a general decarbonization policy

Performance Metrics

- Vegetated acreage increased
- Surface area of roofs and walls retrofit with vegetation
- Total and percentage of electrified projects
- Number and percentage of net-zero carbon buildings built each year
- Building energy intensity

ACTION I: ENABLE GREEN ROOFS AND WALLS, TREE PLANTING, AND OTHER VEGETATIVE COVER BY 2023

By 2023, the City will enable green roof and green wall installations, tree planting, and other vegetative cover on both existing buildings and new construction. Expanding and protecting Chicago's green spaces reduces urban heat, improves air quality, and decreases GHG emissions. Establishing a clear and sustainable strategy aimed at greening our environment will benefit all Chicagoans.

GHG IMPACTS

★☆☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

CDOT, DSS, Chicago Park District, DPD, AIS, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Determine community needs and utilize community leadership
- Define vegetation strategies
- Prioritize EJ areas
- Consider alignment with Federal 30x30 Executive Order that aims to protect 30% of land and water by 2030

ACTION II: ENABLE ELECTRIFIED RENOVATIONS AND NEW CONSTRUCTION BY 2035

By 2035, the City will enable electrified renovations for all existing building types (residential, commercial, and industrial) and new construction. For existing buildings, incentivizing electrified renovations not only will help the City achieve its climate goals, but also will standardize building performance and provide clear benefits to owners and occupants. For new buildings, the transition to all-electric buildings must begin in initial design and construction stages where it is easiest and most cost-effective. Electrified buildings can produce lower energy costs, improved occupant comfort, healthier air quality, and reduced GHG emissions. Enacting electrification incentives will send a strong signal to Chicago's construction workforce that they need to prepare for a rapid transition to all electric appliances and equipment. Additionally, this policy can ensure that all building types will benefit from electrification.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DPD, DOB, CDOT, BACP

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Ensure any increased costs do not reduce supply of affordable housing
- Tie incentives to increasing the supply of affordable housing
- Direct incentives for EJ areas
- Ensure reduced operating costs are reflected in rental costs

ACTION III: ENABLE NET-ZERO CARBON CONSTRUCTION BY 2040

In alignment with IPCC's Building Decarbonization Working Group report, the City will enable net-zero carbon construction by 2040. Net-zero construction standards can dramatically reduce built environment GHG emissions. In addition to targeting energy-related emissions once buildings are in use, net-zero carbon construction incentives will also target embodied carbon – the emissions associated with the production, transportation, and disposal of building materials and the building construction process. Cement production, for example, is a carbon intensive building material. Alternative cements reduce emissions by substituting low-carbon materials for conventional clinker.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Ensure costs do not reduce supply of affordable housing
- Direct incentives to EJ areas
- Ensure access to affordable net-zero carbon construction

PILLAR 2 Reduce Waste and Create Jobs

With more than 2.7 million residents, Chicago generated 4.13 million tons of materials in 2020, or more than 1.5 tons of waste per person per year. The collection, transportation, processing, and treatment of solid waste and wastewater account for 7% of Chicago's GHG emissions. Many more emissions across the global supply chain are associated with the initial manufacturing of those wasted materials. Reducing waste generation through prevention and diverting materials from incineration and landfills provides climate, health, and economic benefits.

A more circular materials management system can provide many benefits to communities. For example, new businesses might arise that are focused on keeping food waste out of landfills. By collecting surplus food and scraps separately for donation or composting, individuals experiencing food insecurity gain access to high-quality meals, food growers gain access to important soil nutrients, and the emissions from landfilling food waste are avoided. Circular solutions focused on reducing, reusing, repairing, and recycling materials can be community-designed to address hyperlocal needs and concerns with typical waste management practices.

As part of the 2021 City of Chicago Materials Management Strategy, 63 recommendations were identified to support a revitalization of Chicago's materials management system. Twelve actions have been prioritized for investment in 2021 and 2022 including increasing opportunities for community interventions, strengthening internal operations, and exploring opportunities for policy reform. The following guiding principles will guide waste diversion goals:

- Reframe Chicago's materials as resources, instead of waste
- Center equity and environmental justice in program design
- Prioritize initiatives with revenue potential, no/low cost, or a positive return on investment when applied at scale
- Equip consumers with the education and tools needed to drive innovation in evolving waste systems

NATURE BASED SOLUTIONS

- Composting provides nutrients that support healthy trees and vegetation
- Small-scale wastewater treatment can reduce runoff and maintain balanced water cycles
- Using products made biological feedstocks products through regenerative agricultural practices supports ecosystem health
- Reducing single-use products preserves forests and other ecosystems
- Regenerating marshes, sloughs, and wetlands for stormwater management reduces wastewater treatment energy use

Between 2018 and 2021, Chicago decreased its annual waste generation by 200,000 tons each year. The 2022 CAP builds upon this progress and sets forth goals for the sectors that contribute to generating waste across the City, including residential, commercial, and industrial activities.

STRATEGY 1: DIVERT WASTE

Acknowledging that reducing overall waste provides the greatest benefits, it is also important to improve the convenience and effectiveness of waste management infrastructure, so it is easy for individuals and businesses to divert waste from landfills. Reusing durable materials for as long as possible, improving recycling rates and addressing contamination issues, and composting organic waste are key starting points. Under current conditions, too many Chicago residents do not have access to convenient recycling and composting infrastructure.

Known Hurdles

- Lack of institutional capacity within City and budget for transitioning from black cart system to more effective options
- Promoting and evaluating the success of prevention approaches
- Communicating materials management procedures effectively with diverse audiences
- Complexity of regulatory structures

First Next Steps

- Improving high density residential recycling ordinance compliance based on 2020 Chicago Office of the Inspector General report findings
- Supporting ambitious statewide extended producer responsibility (EPR) legislation
- Leverage Chicago's participation in the National Resources Defense Council (NRDC) Food Matters Great Lakes Regional Cohort to pilot food waste prevention and recycling programs

Performance Metrics

- Quantity and geographic distribution of community organic waste collection sites
- Compliance rates of low- and high-density residential buildings
- Electronic waste diversion rates

ACTION I: DIVERT 90% OF COMMERCIAL AND INDUSTRIAL WASTE FROM LANDFILLS AND INCINERATION BY 2030

Between 2010 and 2020, Chicago's commercial and industrial waste increased from 1.2 million tons in 2010 to almost 1.5 million tons. Most of this waste ended up in landfills. To achieve a 90% diversion goal by 2030, the City will help commercial and industrial businesses implement new at-source reduction and prevention techniques and improve reuse and recycling. Improving Chicago's diversion rate for these waste streams can reduce operational costs, pollution, and landfill emissions, and enhance local jobs and economic development.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DSS, CDPH, DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize reuse and donation over recycling when applicable
- Combine initiatives to reduce emissions from waste hauling vehicles
- Increase city-wide education on proper materials management procedures

ACTION II: DIVERT 75% OF CONSTRUCTION AND DEMOLITION WASTE FROM LANDFILLS AND INCINERATION BY 2030

By 2030, the City will divert 75% of construction and demolition waste from landfills and incineration. Current construction and demolition waste disposal practices contribute significantly to resource loss through material degradation, increased raw materials extraction, and increased waste transportation emissions. When building materials are sent to landfill instead of being reused, an additional carbon impact occurs because of the need to spend energy on manufacturing replacement materials. Deconstruction, compared to demolition, preserves materials for reuse and is less likely to cause air quality harm. Improved business practices to ensure that salvageable materials are identified and removed for reuse instead of being incinerated or disposed of will be key to this action's success.

GHG IMPACTS

★★☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DSS, CDPH, DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize salvage and reuse over recycling when applicable
- Combine initiatives to reduce emissions from waste hauling vehicles
- Multilingual education materials for contractors and construction workers

ACTION III: DIVERT 90% OF RESIDENTIAL WASTE FROM LANDFILLS AND INCINERATION BY 2040

Smaller residential buildings in Chicago are currently served by the City's blue and black cart programs for recycling and garbage. It relies on individuals placing materials in the correct bin – mistakes cause contamination, add to processing costs, and ultimately lead to many recyclables ending up in the landfill. In larger multifamily buildings, landlords are responsible for providing recycling services for residents. Some may not be in compliance or may use a hauler with confusing rules around which materials can be recycled. In both cases, access to composting services is rare unless individuals go out of their way to find options. This patchwork of practices creates challenges and can be improved by standardizing recycling practices and expanding composting options.

GHG IMPACTS

★★★

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DSS, CDPH, DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Multilingual community outreach and educational materials
- Combine waste collection initiatives to reduce emissions from waste hauling vendors
- Avoid new fees for low-income residents

ACTION IV: ENABLE EQUITABLE WASTE SOURCE PREVENTION BY 2030

Eliminating waste, particularly by avoiding single-use products, brings many benefits. These are the materials most likely to "leak" out of the waste collection system, causing pollution and negative health effects, clogging stormwater management systems, and hampering quality of life. Further, manufacturing these materials causes GHG emissions and other types of pollution, which is an important consideration even if those effects are mostly felt by people on the other side of the globe. One example of source elimination is the 2015 plastic bag ordinance, through which the City banned the use of freely available single-use plastic bags. Exploring the many other alternatives for single-use items will support this goal, with a particular focus on options that create new businesses and are cost-neutral or better for consumers and small businesses.

GHG IMPACTS

★☆☆

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DSS, CDPH, DPD, DOB, BACP

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Minimize impact on low-income customers

ACTION V: ENABLE COMMUNITY-WIDE ORGANIC WASTE COLLECTION AND COMPOSTING BY 2040

In households and restaurants, food waste is typically the largest portion of the waste stream. When sent to landfills, it causes detrimental methane emissions. When recovered for donation or composted and returned to the soil as fertilizer, it feeds food-insecure residents, enables growers to produce more healthy food, reduces the need for irrigation, and prevents flooding during heavy rainfall.

GHG IMPACTS

★☆☆

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DSS, CDPH, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize food donation over composting and ensure surplus edible food reaches food-insecure residents
- Ensure that composting locations do not disproportionally affect one community over another
- Support and build awareness in communities with the lowest waste diversion rates

ACTION VI: ENABLE BUILDING DESIGN FOR DISASSEMBLY AND REUSE BY 2035

When materials are reused, they are kept out of landfills and new material manufacturing is avoided. Buildings that are slated for demolition are filled with thousands of useful materials, though only highly valuable or easily recoverable materials are typically salvaged. Buildings can be designed as modular material assemblies that can be easily deconstructed by skilled professionals. Once disassembled, material assemblies can be installed in new projects. Disassembly and reuse eliminates waste and enables building spaces to change to meet evolving occupant needs. It also protects neighbors from dust, debris, and other harmful effects of less-controlled demolitions.

GHG IMPACTS

★☆☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Provide job training opportunities in priority communities

STRATEGY 2: ELECTRIFY COMMERCIAL FLEETS

Circular economies depend on reverse logistics that return used materials and products to manufacturers for reuse, repair, or recycling. Enabling reverse logistics will increase commercial traffic across all neighborhoods. To support better air quality and emissions reductions as reverse logistics infrastructure is built, the City will enable electrified commercial fleets.

Known Hurdles

- No existing mechanisms to benchmark or monitor transition by industry or commercial building owners
- Interstate commerce laws may limit policy levers for commercial loading dock electrification

First Next Steps

- Conduct commercial loading dock electrification study
- Prioritize existing buildings for loading dock electrification

Performance Metrics

- Number and percent of loading docks equipped with EV chargers
- Number and percent of EVs in delivery fleets

ACTION I: ENABLE 100% ELECTRIFICATION OF DELIVERY FLEETS BY 2035

The last miles that packages travel from distribution centers to homes and businesses create significant GHG emissions and street level air pollution. As online commerce increases so too will delivery truck traffic. Major delivery companies, including FedEx, UPS and Amazon have all committed to delivering with 100% zero emission fleets. The City will enable fleet electrification to ensure these providers and others to meet their fleet electrification targets.

GHG IMPACTS

★★★

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

CDOT, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Ensure individual drivers do not bear costs for EV conversion

ACTION II: ENABLE EV-ENABLED FREIGHT LOADING DOCKS AT NEW COMMERCIAL AND INDUSTRIAL BUILDINGS BY 2025 AND EXISTING COMMERCIAL AND INDUSTRIAL BUILDINGS BY 2030

All electric vehicles, including freight vehicles, have range limits and require periodic charging. A robust vehicle charging infrastructure is needed across the City to make freight vehicle electrification feasible. Loading docks across the City's commercial and industrial buildings are important nodes that will create an electric charging network. For new buildings, EV chargers must be considered during initial design and construction stages where implementation is easiest and most cost-effective. Existing commercial and industrial buildings must be evaluated for loading dock electrification feasibility. Some buildings may require electrical service upgrades to handle added load or improved structural support for charging equipment.

GHG IMPACTS

★★☆

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

DPD, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Enable BIPOC and small contractor participation
- Translate lessons learned from Drive Clean Chicago
- Ensure just transition for existing (small) commercial and industrial buildings (financing for retrofits)
- Equitable job pipeline development for major retrofits and installations
- Prioritize transition for communities overburdened by truck intensive uses

PILLAR 3 Enable Personal Mobility and Improve Air Quality

All Chicagoans need equitable access to safe, reliable, and affordable clean transportation choices. This is especially true in Black and Brown communities that experience longer commute times, have less access to transit, and pay more for transportation. There is an opportunity to align and build upon CAP goals with CDOT's strategic plan that aims to connect people of every age and physical ability in every neighborhood while also systematically reducing transportation costs, breaking the cycle of intergenerational poverty, and making geographic, social, and economic mobility possible.

The commitment to equity and the health of Chicagoans that guides the CAP requires looking at how transportation contributes to pollution and the negative health impacts that trucks, cars, buses, and their emissions have on residents. It also requires investment in infrastructure improvements that prioritize walking, biking, and transit use to reduce emissions and reduce fatalities from car trips, planting trees to increase shade in neighborhoods to reduce the urban heat island effect and designing and building streets that reduce stormwater runoff and mitigate flooding. Steps must be taken to address structural inequities that prevent investments from reaching Black and Brown neighborhoods and look at how our investments can bring out the best in our city.

NATURE BASED SOLUTIONS

- Some parking areas, sidewalks, roads, and bike lanes can be paved with permeable surfaces to avoid runoff and support balanced water cycles.
- Tree and forest buffers along highways and transportation corridors reduce heat islands, air pollution, and noise.
- Streetscapes and parking lots can be explored for vegetated planters, bioswales, and rain gardens

On-road transportation accounts for 15% of total citywide GHG emissions. Reducing these emissions requires that Chicagoans travel fewer miles in fossil fuel-burning vehicles and shift to lower emission transportation options like walking, biking, or transit. More efficient travel is key as well, as to avoid emissions that result from traffic on congested roads. To achieve this goal, neighborhoods will be connected with sidewalks, bike paths, and public transit that are navigable by residents of every age and ability. City processes must also evolve to place higher priority on road repair, street lighting, and sidewalk construction that targets the most disconnected neighborhoods. Policies must enable clean transportation options and enable zero emission transit, freight, and personal vehicles. Better data and reporting must be publicly available to measure progress toward delivering equitable access to safe, reliable, and affordable clean transportation.

STRATEGY 1: INCREASE CTA RELIABILITY, FREQUENCY, AND SPEED AND UPDATE LAND USE POLICIES TO ENCOURAGE MORE HOUSING AND BUSINESSES NEAR TRANSIT

Whether traveling within your neighborhood or crisscrossing the city for a longer adventure, reliable transit plays a vital role in keeping our city connected. Despite the dramatic decrease in ridership, the COVID-19 pandemic proved that public transit is a critical part of an equitable economy and must be preserved and expanded. By increasing access to reliable transit, Chicagoans can reduce the number or distance of vehicle trips and related emissions. It can also help Chicagoans pursue work opportunities in more locations. Walkable neighborhoods, accessible

sidewalks, and transit-supportive improvements on key bus and rail corridors will increase transit ridership, reduce congestion and travel times, and improve air quality.

Known Hurdles

- The ongoing COVID-19 pandemic and shifts to remote working have reduced transit ridership
- Reliable charging infrastructure and updated maintenance protocols are needed

First Next Steps

- Establish transportation mode measurement and reporting
- Complete CDOT's Congestion Pricing and Mobility Study
- Expand electric buses to additional routes

Performance Metrics

- CTA ridership
- Transportation mode distribution
- Total number of EV buses
- Total miles and percentage of transit miles traveled by EV buses

ACTION I: INCREASE CTA RIDERSHIP BY 20% BY 2030 TO REDUCE FOSSIL FUEL-BASED TRAFFIC

If Chicagoans use more sustainable transportation modes, citywide vehicle miles traveled will decrease, reducing GHG emissions. The ongoing COVID-19 pandemic, however, has created many challenges, including for transit. Health and safety protocols have kept many Chicagoans at home and off of transit. 2019 CTA bus and rail ridership totaled 455.7 million, including 237.3 million bus rides and 218.4 million rail rides. Ridership fell 57.6% in 2020, CTA bus and rail ridership totaled 197.5 million in 2020, including 121.5 million bus rides and 76.0 million rail rides. CTA ridership must first rebound to pre-pandemic ridership levels before increasing . The City is committed to prioritizing citywide clean transit and incentivizing its use.

Increasing CTA ridership will require prioritizing transit service and investments to make it more competitive to driving, integral in planning and development decisions, and safely connect residents to its network. A suite of policies will be explored to improve transit comfort and convenience including transit lanes, transit priority stops and signals, congestion pricing, and reducing single-occupancy vehicle trips. Chicago will require or enable new larger developments to proactively encourage sustainable transportation use through Travel Demand Management (TDM) plans. Studies show TDM plans can reduce vehicle miles traveled by 10-20% by residents in covered developments. This action aligns with the City's ETOD Policy Plan. The City will also explore transit subsidies to enable overburdened residents to access transit options. Moreover, the City will implement new ways to measure how people move through Chicago to reliably track progress toward ridership goals. Reducing fossil fuel-based traffic will reduce citywide emissions and improve air quality across the City.

GHG IMPACTS

★★★

CO-BENEFITS

- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

CTA, CDOT, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Prioritize EJ areas
- Measure and report access to safe, reliable, and affordable clean transportation choices by zip code
- Subsidize access for overburdened populations

ACTION II: UPDATE LAND USE POLICIES TO ENCOURAGE SUSTAINABLE DEVELOPMENT THAT BRINGS MORE HOUSEHOLDS AND BUSINESSES NEAR TRANSIT BY 2022

Chicago has the country's second largest public transportation system with 8 train lines and 129 bus routes. Encouraging equitable development near transit nodes to make more households and businesses transit-accessible will make it easier for residents, workers, and visitors to use transit for all trips. Equitable transit-oriented development (ETOD) enables residents to live and work near transit and can reduce vehicle miles traveled and greenhouse gas emissions. Existing zoning rules mandate excessive and costly parking and restrict building density. Updated land use policies that encourage ETOD are needed to meet the City's climate goals. This action aligns with the City's ETOD Policy Plan.

GHG IMPACTS

★★☆

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency
- Economic inclusion and savings

CITY PARTNERS

DPD, DOH, CDOT, CTA

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Ensure housing affordability near transit
- Provide more housing options in exclusionary communities
- Proactively plan against displacement

ACTION III: ENABLE COMMUTER BENEFITS FOR CHICAGO WORKERS BY 2024

Providing incentives for workers to take transit can increase transit ridership. Several cities require or enable employers of a certain size to provide pre-tax commuter benefits to their employees. This action aligns with the CDOT Strategic Plan to introduce a regional TDM program.

GHG IMPACTS

★★☆

CO-BENEFITS

- Reduced pollution burden
- Economic inclusion and savings

CITY PARTNERS

CDOT, BACP

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Subsidize commuter benefits in overburdened communities

STRATEGY 2: ELECTRIFY TRANSIT OPTIONS

In 1883, Chicago's elevated train became the world's first electrified elevated train and is still powered by electricity. This legacy continued with the launch of CTA's first electric buses in 2014. Electrifying transit options is a necessary step to achieving a zero-carbon transit system and improving local air quality. It is equally important to determine how to maximize the use of clean renewable energy power for the newly electrified trains and buses to eliminate the broader inventory of carbon emissions from this sector. Other transit options, including PACE buses and Metra should transition from nonrenewable diesel fuel to electric power sources.

Known Hurdles

- Incremental cost of electric vehicles
- Availability of commercialized electric vehicle products for each vehicle use case
- The City's legal authority to require fleet electrification must be determined
- Financial burden of ride hail vehicle owners to replace and maintain electric vehicles

First Next Steps

- Develop fleet electrification plan
- Engage with PACE and Metra

Performance Metrics

- Percentage of fleet electrification
- Total miles and Percentage of miles traveled by electrified transit

ACTION I: ELECTRIFY CTA BUS FLEET BY 2040

In 2014, CTA was the first large transit agency in the United States to pilot 100% electric buses. In 2019, the CTA committed to electrifying its entire bus fleet by 2040. Today, the #66 Chicago route carries passengers on its electric buses and further investment in the bus fleet charging infrastructure will enable CTA to expand the number of electric buses across their routes. New e-buses will be phased into CTA's fleet to replace older buses. CTA bus fleet electrification will reduce citywide GHG emissions and improve air quality across the City. To learn more about the opportunities and strategies of the electrification process, explore Charging Forward: CTA Bus Electrification Planning Report.

GHG IMPACTS

★★☆

CO-BENEFITS

- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

CTA, DOB, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Prioritize EJ areas

STRATEGY 3: ELECTRIFY FLEETS

Shifting to electric taxis, ride hail fleet, and City vehicles, will replace approximately 50,000 combustion-engine vehicles. Charging station expansion will enable this transformation. This fleet electrification will reduce citywide emissions, reducing vehicle operating and maintenance costs, and improve air quality across the City.

Known Hurdles

- Incremental cost of electric vehicles
- Availability of commercialized electric vehicle products for each vehicle use case
- Diverse utilization of municipal fleet vehicles
- Financial burden of ride hail vehicle owners to replace and maintain electric vehicles

First Next Steps

- Develop fleet electrification plan for diverse municipal fleet
- Clarify the City's legal levers to require ride hail fleet electrification
- Collaborate with ride hail companies to accelerate their stated electrification targets within the City

Performance Metrics

- Percentage of fleet electrification
- Total miles and Percentage of miles traveled by EVs

ACTION I: ELECTRIFY 100% OF THE CITY'S FLEET BY 2035

The City's vehicle fleet will transition to electric vehicles by 2035. New vehicle purchases will be electric as the fleet expands and as older vehicles are phased out.

GHG IMPACTS

★★☆

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

AIS, CDOT, CPS

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize EJ areas

ACTION II: SUPPORT EQUITABLE ELECTRIFICATION OF RIDE HAIL AND TAXI FLEETS BY 2030

Both Uber and Lyft have committed to transition to zero emission fleets by 2030. The Federal Infrastructure Investment and Jobs Act includes $7.5 billion for electric vehicles. By 2030, electric vehicle sales are expected to reach 50% of total US vehicle sales. The time to transition to electric vehicles is now. Ride hail and taxi fleet electrification will reduce citywide emissions, reduce fuel costs for ride hail and taxi drivers, and improve air quality across the City.

GHG IMPACTS

★★★

CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

BACP, CDOT

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Prioritize EJ areas

STRATEGY 4: INVEST IN INFRASTRUCTURE, POLICIES AND PROGRAMS THAT ENABLE WALKING, BIKING, OR TRANSIT AS VIABLE OPTIONS FOR ALL TRIPS

Virtually every Chicagoan must navigate the city's roads and sidewalks as part of their transit journey. Streets that are safe to cross and sidewalks that are maneuverable and wide enough to accommodate a wheelchair or stroller are necessary preconditions for a livable and well-connected communities. Every neighborhood should have Complete Streets—streets that have the necessary infrastructure to ensure safe and comfortable travel for everyone. Sidewalk condition assessments must be conducted, prioritizing historically underserved communities. Poor quality sidewalks must be improved, and new sidewalks must be added where they are missing. Crosswalks and curb ramps at transit stops and other priority locations will continue to be installed or enhanced.

Continuing to make cycling a greater part of how we get around in Chicago requires a biking network that serves all neighborhoods and makes every day bicycling safe and convenient for people of all ages and abilities. Biking must *feel* safe, in addition to being statistically safe. The City aims to make cyclists feel safe and experience a low

level of traffic stress. The network of protected lanes, neighborhood greenways, and off-street trails will continue to grow citywide, and traffic flows will continue to be evaluated to optimize bike routes for safety and convenience.

To ensure that walking, biking, and transit use remain viable for all trips, the City must prioritize sidewalk and road maintenance by using an equity lens along with condition assessments to address historic imbalances in the upkeep of City infrastructure.

Known Hurdles

- Time-intensive nature of network planning to seek meaningful input from community stakeholders
- Funding for total system completion
- Acceptance of bike lanes
- Sidewalk quality data
- Biking network, while in progress, has gaps

First Next Steps

- Evaluate effectiveness of e-bike charging stations
- Complete 50 miles of bike lane network expansion with a focus on South/West Sides
- Establish a framework for Neighborhood Bike Network planning and begin the process in 3 West Side communities
- Implement CDOT Strategic plan
- Conduct and publicly report sidewalk condition assessments
- Establish transit mode measurement and reporting
- Install 200 (total) new Divvy stations on the South, Southwest, West, and Northwest sides

Performance Metrics

- Daily Divvy trips of 1.5 per 1,000 residents in five economic hardship areas from May to October
- Miles of protected bike lanes
- Miles of total bike lanes
- Miles of off-street trails
- Transportation mode distribution
- Transportation mode distribution
- Sidewalk quality indicators

ACTION I: INVEST IN INFRASTRUCTURE, POLICIES AND PROGRAMS THAT ENABLE CHICAGOANS TO WALK, BIKE, TAKE PUBLIC TRANSIT, OR USE SHARED MICROMOBILITY FOR 45% OF ALL TRIPS BY 2040

Decreasing vehicle miles traveled, with particular focus on minimizing single occupancy vehicle trips, is the largest opportunity to reduce Chicago's transportation emissions. Strategies and actions that focus on making roads and sidewalks safer for all users will make the City more walkable, bikeable, and transit friendly. The transportation mode used needs to be measured to evaluate how effective the City is in incentivizing shifts from driving to lower-carbon modes of travel. It is estimated that walking, biking, or transit riding account for 36.5% of commuting trips in Chicago. The City will invest in the lowest carbon and highest efficiency modes of transportation to increase walking, biking, transit, or shared micromobility use to 45% of all trips by 2040.

GHG IMPACTS

★★★

CO-BENEFITS

- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

CDOT, CTA, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Prioritize EJ areas

ACTION II: EXPAND HIGH-QUALITY AND LOW-STRESS ON-STREET BIKEWAYS AND OFF-STREET TRAILS TO REDUCE TOTAL ANNUAL FOSSIL FUEL-BASED TRAFFIC BY 50M VEHICLE MILES PER YEAR

Chicago's bike network includes 400 miles of bike lanes, including 35 miles of protected lanes, 113 miles of buffered lanes, and 27 miles of neighborhood greenways (residential routes). Cyclists can also access 55 miles of off-street paths (including the 18.5-mile Lakefront Trail). Protected bike lanes separate cyclists from vehicular traffic using concrete curbs or other types of physical barriers. High-quality and low-stress bikeways must continue to be added to the city's network to reduce emissions from transportation.

GHG IMPACTS

★☆☆

CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

CDOT, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Prioritize EJ areas

ACTION III: INCREASE DIVVY AND SHARED MICROMOBILITY TRIPS 30% BY 2030 REDUCING FOSSIL-BASED TRAFFIC BY 2.2M MILES PER YEAR

Over 5.5 million Divvy rides were taken in 2021, a 60% increase over 2020 ridership (3.4 million rides) and a 44% increase over 2019 ridership (3.81 million rides). Over 200 new Divvy stations will be delivered to the South, Southwest, West, and Northwest sides. By the end of 2022, the Divvy network will expand to serve the entire City with16,500 bikes. The City targets achieving a ridership of at least 1.5 Divvy trips per day for every thousand residents in five economic hardship areas (identified via census and public health data) from May to October. Increasing Divvy ridership to reduce fossil-based traffic by 2.2 million miles will improve City air quality, public health, and reduce citywide emissions.

GHG IMPACTS	CO-BENEFITS	CITY PARTNERS
★☆☆	▪ Reduced pollution burden ▪ Community health and resiliency	CDOT

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Conduct community mobility needs assessments
- Continue education efforts in EJ areas, especially learn-to-ride classes
- Prioritize EJ areas
- Subsidize access for overburdened populations

ACTION IV: UPDATE LAND USE POLICIES TO ENSURE NEW DEVELOPMENT PRIORITIZES STREET SAFETY AND ACCESSIBILITY, ESPECIALLY NEAR TRANSIT, BY 2022

Access to public transit is most useful if people can safely and comfortably reach transit stops. Unfortunately, many streets near transit are not people-friendly due to sidewalk interruptions, poor lighting, or unwelcoming or vacant storefronts. Many Chicago residents, especially seniors, people with disabilities, families, and children, express feeling unsafe when walking to and from transit due to vehicles that interrupt pedestrian ways. Ensuring that new developments prioritize pedestrian safety and accessibility – especially near transit – is critical to making it easier to live car-free or car-lite and thereby reduce greenhouse gas emissions. This action aligns with the City's ETOD Policy Plan.

GHG IMPACTS	CO-BENEFITS	CITY PARTNERS
★☆☆	▪ Equitable access to critical infrastructure ▪ Community health and resiliency	CDOT, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize infrastructure investments in overburdened communities
- Enable community use of vacant lots

PILLAR 4 Enable Chicago's Clean Energy Future

As the effects of climate change grow more serious, decreasing reliance on fossil fuels is critical to reduce emissions and mitigate climate-related impacts. In 2017, more than 42% of Chicago's GHG footprint came from electricity consumption. Coal and natural gas generate more than half of the electricity on the regional grid that serves Chicago. Transitioning from these sources to 100% renewable energy will dramatically reduce citywide emissions and improve regional air quality.

Renewable energy is naturally replenishing, virtually inexhaustible, and emission-free. It can also increase the reliability and resiliency of the electric grid. Like all power sources, wind and solar do not operate 100 percent of the time. But their flexibility and predictability can increase grid stability when equipment is designed to withstand a broad range of weather conditions. Combining renewable energy with energy storage further enhances power reliability. Community energy resilience from local renewable energy generation will help Chicagoans withstand severe weather and power-loss events.

Solar and wind power are the cheapest sources of electricity today. Through the expansion of community-owned solar projects, investment in regional renewable energy generation, and an increase in accessibility and affordability for low-income communities, Chicago residents who pay for electricity, whether directly or indirectly, will save money. Installation and expansion of local renewable energy will also spur economic growth and create career development and mobility opportunities.

Chicago is well-positioned to access federal, state, and local funding to achieve our ambitious renewable energy goals. In Illinois, the Climate and Equitable Jobs Act (CEJA) commits the state to deliver 100% carbon-free power by 2045 and 100% clean energy by 2050. In Chicago, a $200 million Climate Bond has been invested as down payment on climate resiliency and mitigation. Funds will provide the City's underserved communities with resilient infrastructure and green workforce development opportunities. The $1.887 billion Chicago Recovery Plan includes budget for climate action, specifically including funding for environmental justice ($86.8 million), community climate investments ($101.3 million), community development ($166 million), and small business and workforce support ($87 million). In partnership with several Chicago-based renewable providers, Chicago can use this funding to create energy resiliency in our communities and ready our City for the future.

NATURE BASED SOLUTIONS

Utilize permeable surfaces such as low, no-mow native grasses and vegetation, to reduce runoff, support pollinators, and protect balanced water cycles where solar power installations are placed in Chicago or as part of any off-site power agreement.

STRATEGY 1: 100% CLEAN RENEWABLE ENERGY

We can clean our electric grid and enhance power reliability by investing in the development of new renewable energy generation sources and storage. Installation and expansion of in-City and in-state renewable energy will spur economic growth and create employment opportunities. As renewable electricity supply grows, highly polluting fossil fuel electricity plants can be retired and remediated. As Chicago electrifies its buildings and vehicles, powering these systems with renewable energy will clean our air while reducing impact on the climate. Expanding community-owned options, installing renewable projects on City property, and utilizing state funding

will help Chicago achieve its 2035 goal. While it is not realistic for dense urban cities like Chicago to produce all their energy within city limits, long-term power purchase agreements with large scale renewable developments located outside the City can be structured to include cost savings and community benefits for Chicagoans. When done thoughtfully, developing new clean energy sources can help underserved communities by creating high quality jobs and reducing household energy burden.

Known Hurdles

- Vendor capabilities, available vendors, and vendor contracting support
- Community adoption requires significant education, outreach, and relationship building
- Needed modifications to Illinois municipal aggregation law
- Predatory alternative supplier markets
- Identifying proper government department ownership
- No current formal clean energy partnership or programs between the City of Chicago and its electric utility

First Next Steps

- Strengthen and establish diverse clean energy career development pathways
- Finalize electricity supply agreement to meet municipal power needs with 100% renewable energy
- Prioritize communities and buildings for solar deployment
- Develop clear educational materials and compelling outreach strategy
- Establish robust consumer protections against predatory suppliers
- Finalize new Electricity Franchise Agreement and Energy and Equity Agreement with an electricity distribution utility

Performance Metrics

- Percentage of clean renewable energy supplied to the City of Chicago
- Total megawatts (MW) of community-owned solar projects developed
- Total MW developed within a 250-mile radius of the City of Chicago
- Total number of community renewable subscriptions
- Total MW of Chicago-based community renewable energy
- Total MW of renewable energy installed on City of Chicago property

ACTION I: INSTALL 5 MW OF COMMUNITY-OWNED SOLAR PROJECTS BY 2025

By 2025, 5 MW of community-owned solar projects will be installed within city limits. This amount of solar can power more than 1,100 Chicago homes each year. Community energy infrastructure owned by individual Chicagoan shareholders brings unique benefits, including protection from cost volatility and harsh penalties, and will prioritize households with the highest energy burdens. Community-owned solar allows residents, including renters, to take advantage of reduced energy rates and clean energy without having to install or own a solar array on their property.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden

CITY PARTNERS

AIS, DOB, CHA, CPL, CPS, CCC, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Give communities shared leadership in siting solar projects
- Ensure new projects are additive to existing programs
- Facilitate good business and consumer protection practices

ACTION II: AGGREGATE 5,000 MW OF CLEAN RENEWABLE ENERGY WITHIN A 250-MILE RADIUS OF CHICAGO BY 2030

By 2030, Chicago will bolster its relationships with surrounding counties to promote the growth of clean renewable energy, aligned with Ilinois' goal of reaching 100% clean energy state-wide by 2050. To achieve Chicago's goal of 100% clean renewable energy, the City will need to enable installations outside the Chicagoland area. Because of economies of scale, utility-scale development that leverages state and Federal funding, is important for making clean energy affordable. By focusing on development within a 250-mile radius of the City, Chicago will boost the regional clean energy economy and improve air quality. This amount of clean energy can power more than 1.1 million Chicago homes each year.

GHG IMPACTS

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CO-BENEFITS

- Reduced pollution burden
- Equitable access to critical infrastructure

CITY PARTNERS

DPD, DOB, AIS

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Give communities shared leadership in where renewable energy projects are constructed
- Provide opportunities for job training
- Prioritize MBE, WBE, DBE, and BEPD

ACTION III: INCREASE COMMUNITY RENEWABLES SUBSCRIPTIONS TO ACHIEVE 25% SUBSCRIBED BY LOW-INCOME AND/OR EJ LOW-INCOME RESIDENTS BY 2030

By 2030, the City will increase community renewable subscriptions to achieve 25% subscribed by low-income and/or EJ low-income residents. Community renewable subscriptions allow residents to take advantage of reduced energy rates and clean energy without having to install or own a solar array on their property. This expands access to the benefits of solar to both renters and homeowners without suitable roofs for solar. Providing access to community renewables for low-income or EJ households reduces energy cost burdens while supporting the City's 2035 100% renewable energy goal.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DPD, BACP, DFSS

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Remove barriers related to financing, education and outreach (multilingual)
- Streamline income eligibility and other documentation requirements
- Examine options to integrate with existing energy assistance programs

ACTION IV: INCREASE CHICAGO-BASED COMMUNITY RENEWABLES TO 20 MW BY 2025

By 2025, the City will increase Chicago-based community renewables to 20 MW. Expanding access to renewable energy to all Chicagoans starts by building energy infrastructure within City limits. Community renewables provide all Chicagoans access to the benefits of renewable generation, including lower electric bills, even if they are unable to have an on-site solar system at their home or business. These projects bring tremendous benefits to Chicago, including cleaner air, reduced energy costs for households, and jobs. The City will explore all options to host these projects, including City-owned sites and Chicago-based non-profit organizations and businesses.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

DPD, BACP, DFSS

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Remove barriers related to financing, education and outreach (multilingual)

- Streamline income eligibility and other documentation requirements
- Examine options to integrate with existing energy assistance programs

ACTION V: INSTALL 30 MW OF CLEAN RENEWABLE ENERGY PROJECTS ON CITY PROPERTY BY 2030

The City will lead by example in the transition to clean energy by taking advantage of its physical assets. Installing solar arrays on city-owned properties ensures that previously underutilized space can reduce energy costs, increase local job opportunities, and improve city-wide energy resilience. As a first step, the City will work with technical consultants and utility partners to assess the feasibility of installing solar arrays on City-owned properties

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

AIS, DOB, CHA, CPL, CPS, CCC, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Integrate job training programs
- Examine options for hosting low-income community solar or being an anchor tenant

ACTION VI: PROVIDE 100% CLEAN RENEWABLE ENERGY COMMUNITY-WIDE BY 2035

By 2035, the City will work with utilities to provide 100% clean renewable energy community-wide. The City will prioritize local generation and provide communities shared leadership in determining where renewable projects are constructed. The transition to a cleaner future will help the City reduce carbon emissions, improve air quality, increase economic opportunities, and build a more resilience energy grid.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

AIS, DOB, CHA, CPL, CPS, CCC, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize local generation
- Give communities shared leadership in project siting
- Evaluate projects for environmental justice at point of generation
- Ensure no rate increase for households

STRATEGY 2: ENABLE INTERCONNECTION AND STORAGE

To ensure that cleaning our electric grid enhances power reliability and resiliency, Chicago will increase energy storage and distribution, and will promote better demand response during periods of peak electricity usage. Community energy resilience, via renewable energy generation combined with energy storage, can help communities withstand power loss events. Power losses caused by severe weather or surges in energy consumption can pose serious threats to Chicagoans, particularly those who are low-income, medically dependent, elderly, or who have disabilities. For many, losing food, heat, or medical equipment due to power outages can be life-threatening. Fossil-fuel burning backup generators can help during these events, but they are often expensive, energy inefficient, and polluting. Clean, local microgrids make those systems obsolete.

Known Hurdles

- Vendor capabilities, available vendors, and vendor contracting support
- Equitable ownership and placement of energy storage

First Next Steps

- Integrate equitable interconnection and storage strategies into the City's electricity franchise agreement

Performance Metrics

- Energy storage capacity
- Demand response capacity

ACTION 1: PROVIDE 150 MW OF ENERGY STORAGE BY 2025

Investing in energy storage capacity is necessary to enable a full transition to renewable energy. Wind and solar production vary daily and seasonally, making storage critical to reliable supply from renewables 24 hours a day. Building storage capacity adds grid flexibility and reliability and has air quality benefits. During peak demand, like hot summer days requiring heavy air condition use, electricity generators need to turn on their backup peaker plants, which often create more pollution than the main generation plants. Batteries can fill the gap created by these energy surges without activating the dirtiest supply options. By working with partners to build energy storage within city limits, the City can prioritize enhancing reliability in communities particularly susceptible to climate-related power loss events. Since these power loss events pose a serious threat to Chicagoans, combining renewable energy generation with energy storage can help reduce community vulnerability by keeping live-saving equipment turned on and running. This combination will also lower energy bills for ratepayers.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

AIS, DOB, CHA, CPL, CPS, CCC, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Give communities shared leadership in project siting, prioritizing resilience, renewable generation and local emission reductions
- Connect with job training and local economic development
- Prioritize MBE, WBE, DBE, and BEPD
- Enable community ownership, direct community benefits, and access to value stack
- Ensure deployment reduces energy bills for ratepayers
- Examine decommissions EJ impacts and promote circularity

ACTION II: PROVIDE 1,000 MW OF DEMAND RESPONSE BY 2024, AND 3,000 MW BY 2035

Demand surges can exacerbate air pollution and cause power losses for many Chicagoans. To mitigate this, demand response programs enable users to consume less power during peak hours. By achieving 1,000 MW of demand response by 2024, and increasing to 3,000 MW by 2035, Chicagoans will be better protected during extreme weather events, when electrical grids are unable to supply enough power to meet surge in demand. Effective demand response programs can not only reduce energy consumption and make our grid more reliable, but also can reduce emissions by reducing reliance on Chicago's peaker plants (power plants used only when there is a high demand for electricity).

GHG IMPACTS

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CO-BENEFITS

- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

AIS, DOB, CHA, CPL, CPS, CCC, DPD

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Target demand response to reduce dirtiest fossil peaker use in EJ areas
- Ensure consumer protections and access to benefits of ADR and other consumer-level demand response programs/tech

STRATEGY 3: DECOMMISSION FOSSIL POWER

Cleaning our electric grid cannot just be accomplished by improving access to renewable energy generation or increasing distributed generation and storage or incentivizing demand response; the City must also look to where our energy is being produced and how it is being produced. Illinois still relies on fossil-fueled power plants. These "dirty" plants emit large amounts of unchecked greenhouse gases. Luckily, besides peaker plants, there are no fossil fueled plants within city limits.

Known Hurdles

- Clean renewable back-up power must be available prior to decommissioning

First Next Steps

- Identify peaker plants and create a decommissioning plan

Performance Metrics

- Number and capacity of decommissioned fossil plans

ACTION I: DECOMMISSION USE OF FOSSIL-FUEL PLANTS BY 2025

By 2025, the City will work with regional partners to reduce reliance on fossil fuel powered peaker plants within the city. In addition, the City will work with state partners to implement the provisions within the Climate and Equitable Jobs Act (CEJA) to ensure the benefits of a just energy transition support Chicago residents and businesses as well. By reducing Chicago's reliance on fossil-fuels and helping Illinois retire its polluting energy infrastructure, the City not only can improve overall grid resiliency, but also can improve air quality, reduce pollution and dramatically decrease greenhouse gases. A just energy transition to renewable sources will also provide new economic opportunities for Chicagoans.

GHG IMPACTS

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CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

AIS

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Provide career transition and development resources to ensure just transition for workers at these plants
- Prioritize closing dirtiest plants first
- Give communities shared leadership in decommissioning plans and prioritization

PILLAR 5 Strengthen Communities and Protect Health

Delivering climate equity for all Chicagoans requires decision-making informed by relevant, accurate, and consistently measured metrics. Quality of life metrics can track progress and hold the City and partners accountable for delivering equitable outcomes and can illustrate how well the City is measuring up to closing the racial life expectancy gap. The City will continue working with communities on the frontline of the climate crisis to define metrics that enable and encourage equity-forward decisions by City departments and policymakers.

Relevant

Quality-of-life metrics will be used to evaluate progress and gaps toward achieving climate equity for all Chicagoans. To inform impactful decisions, metrics must show where further action is needed to reverse harmful impacts on overburdened, underserved, vulnerable, frontline, and other communities. These metrics will include but are not limited to the following indicators: economic inclusion and savings, reduced pollution burden, community health and resiliency, equitable access to critical infrastructure, and community resilience. Metrics should be understandable and accessible to all Chicagoans.

Accurate

The City will work to develop quality-of-life metrics that are built using both lived experiences and scientific evidence. To ensure transparency, the City will disclose the data sources and how the data is used to create its metrics.

Consistent

The City will work to develop quality-of-life metrics that are complete and regularly reported. Incomplete data will be avoided to ensure that the needs of residents in all communities are correctly reflected in reported metrics and the decisions they inform. However, incomplete data will not be an excuse to ignore communities underserved by current data collection and reporting. The City will endeavor to ensure data collection and reporting are comprehensive and equitable.

NATURE BASED SOLUTIONS

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

STRATEGY 1: COLLECT RELEVANT DATA

The percentage of household income spent on energy costs (energy burden) and pollution exposure are unique to each household. Proximity to pollution sources like roadways or industrial facilities determines the quality of air and soil that each household experiences. Electricity and gas rates that customers pay determine the percentage of household income spent on energy services (amount of energy burden). City-level data cannot help identify where pollution exposure is high, or where or when residents must choose between buying food and heating or cooling their homes.

Energy burden, water quality, soil quality, and air quality data can be used to measure the equity of climate action across Chicago neighborhoods. Data will be collected by community area, where possible, to show

decisionmakers where and how their decisions most impact residents. By tracking these data points in each neighborhood, residents can hold City leadership accountable to make equitable decisions that address energy burden and pollution exposure.

Known Hurdles

- Current energy burden data cannot be used at zip code levels
- Funding and operational support are needed to install and maintain water and air quality monitors, conduct soil tests, and address poor results

First Next Steps

- Evaluate reporting requirements and data availability in collaboration with utilities and other public agencies such as the Illinois Commerce Commission
- Establish reporting and governance requirements
- Define minimum water, air, and soil quality levels and consistently address problems when these minimum levels are not met

Performance Metrics

- Percent decrease in energy burden over time
- Percentage of students with access to healthy soil, reported citywide and per neighborhood
- Coverage (%) of air quality monitoring at CTA stations, and targeted bus stops

ACTION I: REPORT ENERGY BURDEN BY COMMUNITY AREA BY 2023

Energy burden is experienced when households spend so much income on electricity or gas bills that it is difficult to buy food, access transportation, and grow wealth. The City will analyze energy reports and other data sources per zip code to identify where building retrofits or energy subsidies are most needed. Tracking this data over time will also measure progress toward achieving the City's equity goals.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

OERJ, CDPH

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize EJ areas

ACTION II: DEVELOP A WATER AND SOIL QUALITY MEASUREMENT AND MITIGATION STRATEGY BY 2023

A commitment to advancing environmental justice recognizes the difference in exposure to contaminants based on proximity to sources of pollution. Water quality can change as water infrastructure ages or as water sources become polluted. Poor water quality can expose people to dangerous contaminants and chemicals which can adversely impact the health of individuals. Similarly, soil contamination can also expose residents to dangerous chemicals and reduce property values.

In partnership with City-operated facilities, sister agencies, and community-based organizations, proactive measurement, public reporting, and application of water and soil quality data can inform where infrastructure improvements are needed and help prioritize investments to ensure healthy, safe, and vibrant communities.

GHG IMPACTS

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CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

AIS, DWM, Park District

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize EJ areas
- Equitably install and maintain water quality monitors, and equitably test soil quality
- Equitably address problems when poor water or soil quality is identified

ACTION III: ESTABLISH A ROBUST OUTDOOR AIR QUALITY MONITORING NETWORK BY 2025

Exposure to pollutants such as ozone and $PM_{2.5}$ is associated with increased risk of respiratory infections, lung irritation, asthma, cardiovascular disease, cancer and early death. Fossil fuel combustion has a negative impact on climate change and air quality, both indoors and outdoors. By reducing fuel combustion and increasing nature-based solutions (example: planting trees in neighborhoods), climate action can improve air quality. Measuring and reporting air quality at various sites such as CTA bus and "L" stations, schools, or city facilities will demonstrate the impact of the City's climate investments and the modernization of planning policies. In addition, a monitoring network will help identify where more action is needed to ensure all residents have access to healthy air.

GHG IMPACTS

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CO-BENEFITS

- Reduced pollution burden
- Community health and resiliency

CITY PARTNERS

AIS, CTA, CPS, CDPH

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Prioritize EJ areas
- Equitably install and maintain air quality monitors
- Equitably address problems when poor air quality is identified

STRATEGY 2: ENABLE DATA DRIVEN DECISION-MAKING

Achieving equity across neighborhoods will require that City policymakers and implementers have relevant and accurate data when making decisions. By integrating decision-making with equity criteria, City decisions can be made to objectively prioritize health outcomes. In collaboration with community groups and frontline leaders, the City will define health and equity indicators building on the past framework of the Health in All Policies City resolution and the Healthy Chicago 2025 plan advancing racial equity to close Chicago's life expectancy gap. It will also create a consistent measure of which communities lack equitable access to a quality life.

Known Hurdles

- Government leadership and operational support are needed to ensure that health and equity criteria are consistently considered when making decisions
- Privacy or security concerns may prevent the City from transparently disclosing how health and equity criteria factored into decisions
- Occasionally urgent decisions must be made without first including community groups
- Existing reliable, granular data may not exist for all desired metrics
- Resourcing is needed for data collection and reporting

First Next Steps

- Establish health and equity criteria and process for integrating them with decision-making processes
- Convene community working groups to establish quality of life and just transition metrics and to review and update community resilience metrics

Performance Metrics

- Qualitative and quantitative descriptions of anticipated equity outcomes of each decision
- Realized equity outcomes of decisions
- Year-over-year progress across established metrics

ACTION I: INTEGRATE HEALTH AND EQUITY CRITERIA WITH ALL CITY DECISION-MAKING BY 2022

All Chicagoans deserve a quality life and access to living-wage employment, clean air and water, reliable and affordable utility services, and quality healthcare. The City will define health and equity criteria to assess the impact of City decisions on the health and wellbeing of Chicagoans across all neighborhoods. Criteria may include pollution generation potential, impact on household savings and wealth generation, walkability to public transit, access to healthcare or healthcare insurance, access to parks and nature, and/or community access to resources and services. The City will set up a consistent process to collect and publish health and equity criteria. An objective process will also be set up to guide internal decision-making and external development processes.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

OERJ, DPD, CDOT

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Include community groups and frontline leaders when establishing decision-making criteria
- Where relevant, establish health and equity criteria that enable decisions to be made while considering impacts across communities, gender, race, ethnic groups, and socio-economic groups.

ACTION II: ESTABLISH QUALITY OF LIFE METRICS AND MEASURE PER COMMUNITY AREA BY 2023

Quality of life is commonly measured at the country or city level. When income and access to services and amenities are evaluated citywide, Chicago consistently ranks as an affordable city with excellent job opportunities and many recreation options. In reality, many Chicagoans struggle to afford life in the City. They cannot access the jobs and recreation options that the City offers. Quality of life must be measured at the community area level to identify where investment, services, and support are needed to ensure all Chicagoans can live well and thrive.

The City will work with community groups and frontline leaders to identify metrics that meaningfully reflect community needs, aspirations, and wellbeing, in addition to working with data experts that are knowledgeable in measuring quality of life. These metrics will be measured and publicly reported at a future determined cadence.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Reduced pollution burden
- Equitable access to critical infrastructure
- Community health and resiliency

CITY PARTNERS

CDPH, OERJ

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Include community groups and frontline leaders when establishing quality of life metrics
- Needs and aspirations will vary by community – overburdened communities' needs and aspirations must be prioritized

ACTION III: UPDATE AND PUBLISH COMMUNITY RESILIENCE METRICS BY 2022

Community resilience is a measure of a community's ability to respond to, overcome, and recover from challenging situations. Climate change will increase droughts, flooding, lake-level fluctuations, and temperature extremes. The above climate change effects also have a significant role in public health by increasing the risk of allergens, lung disease, vector borne diseases, food insecurity, food and water safety, and mental health conditions. Communities must be prepared to deal with these challenges. Community resilience metrics will be established with community leaders and frontline leaders. Updated metrics will be measured and publicly reported at a future determined cadence.

GHG IMPACTS

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CO-BENEFITS

- Community health and resiliency

CITY PARTNERS

CDPH, DPD, OEMC, DFSS

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Include community groups and frontline leaders when establishing community resilience metrics
- Needs and aspirations will vary by community – overburdened communities' needs and aspirations must be prioritized

ACTION IV: PUBLISH JUST TRANSITION METRICS BY 2022

The transition away from fossil fuels to a zero-carbon economy will benefit many, but there is a risk that some – such as workers in the fossil fuel industry – will be left behind and jobless. There is also a risk that some communities will lack access to the unprecedented opportunities this transition represents for Chicago. A just transition supports economic inclusion for all Chicagoans as the City shifts to a green economy. Employment opportunities, worker rights, dialogue with decision-makers, and social protections are all needed to achieve a just transition. The City will work with community groups and frontline leaders to define and publish metrics of each community's level of inclusion in the City's transition to a green economy. Metrics will be measured and publicly reported at a future determined cadence.

GHG IMPACTS

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CO-BENEFITS

- Economic inclusion and savings
- Community health and resiliency

CITY PARTNERS

CDPH, DPD, CDOT, DOB

EQUITY, RESILIENCY, AND EJ CONSIDERATIONS:

- Include community groups and frontline leaders when establishing just transition metrics
- Needs and aspirations will vary by community – overburdened communities' needs and aspirations must be prioritized

ADAPTATION AND RESILIENCE

The goals of the 2022 CAP are ambitious and illustrate the need for collective, coordinated and equitable action for optimal impact. As we work together to slow the pace of climate change through mitigation strategies, it is important to take action to minimize the impact of the changes we can no longer avoid. A wide variety of strategies can be used to stabilize current emissions levels and adapt to known shifts in our region's climate patterns. Community-level empowerment and investment must be a part of any strategy to ensure community leaders have accurate information and an awareness of which resources and systems are available for their community's use. Responses to the climate crisis will become more difficult and expensive to implement the longer equitable adaptation and resilience efforts are deferred.

Effective and responsive climate action planning can be complex and requires highly coordinated efforts from the local government, individual households, communities, businesses and other stakeholders. This section is focused on two related pathways toward climate stability: adaptation and resilience. To illustrate this, we can think about extreme heat events caused by climate change. Adaptation accepts the new reality - an increase in extreme heat days - and modifies systems and practices given the new reality. Resilience, on the other hand, is the ability to recover quickly from future extreme heat events due to sufficient anticipation and preparation.

Community residents on the frontlines of climate change across Chicago have learned to anticipate a flooded basement or impassable street after a heavy summer storm. During the winter, commuters adjust their schedules to allow extra travel time or may miss work if transit systems are unable to operate. Current and anticipated changes to our region's climate, however, will make these seemingly simple, expected shifts more serious and less predictable. With extreme rainfall, more intense and unpredictable flooding may cause damage and loss to personal and public property; create hazardous health conditions due to exposure of contaminated sewer water; or destroy crops and disrupt access to fresh produce and the livelihoods of affected farmers.

Extreme heat is expected to bring more days of extreme temperatures and longer seasons of heat. More days of these heat conditions may worsen air quality and put residents with existing health conditions such as asthma or heart disease at greater risk; require extended use of cooling appliances and increase utility costs over the season; or require more frequent activation of cooling centers and support services like transportation services and well-being checks.

Worsening winter weather conditions of heavy snow, ice accumulation, and intense winds present safety risks associated with hazardous driving conditions; endanger the health and safety of those experiencing homelessness, housing insecurity, or who cannot afford to pay their utility bills; and burden City services and resources such as plows and salt trucks, 911, and other emergency responders.

These familiar weather patterns are gradually increasing in frequency and intensity. When unaddressed, slow-moving disasters can place tremendous pressure on families and communities, especially those who experience multiple impacts over a short period of time or are already vulnerable based on medical or economic status, quality of housing, and age. Mitigation efforts alone are not sufficient to protect communities burdened by the cumulative impact of various social, economic, health, and environmental inequities. There is a need for community-level education and engagement to ensure those communities most affected by the impacts of climate change have the necessary tools and preparation to act quickly and decisively to save lives in a time of need.

Historically, planning and investments for adaptation and resilience have benefitted high-income and/or politically active communities. Due to unjust practices in planning and political engagement, there are greater barriers to participation and decision-making for older adults, low-income, people of color, as well as those with medical or mobility challenges. As a result, these communities lack the necessary access and resources to efficiently respond to the climate hazards they are more likely to face. The simultaneous challenges of facing climate risks at a disproportionate rate while not being involved in the processes to design possible solutions underscore the imbalanced way that climate change is impacting communities. To prevent further harm, restore, and prepare Chicago communities to be climate-ready, all adaptation and resilience actions must be anchored in the values of equity, racial justice, and community leadership.

Given the outsized role in impacting climate that dense urban cities play, Chicago stands as a ready partner in several regional hazard mitigation and adaptation planning spaces. As member of the 2019 Steering Committee for the update of the Cook County Multi-Jurisdictional Hazard Mitigation Plan, the City, along with more than 115 municipalities across Cook County, federal agencies, and other partners, worked to identify risks and make appropriate response plans for natural hazards like flooding, extreme winter weather, and tornadoes, in the county. Chicago is a founding member of the Metropolitan Mayors Caucus, which brings 275 cities across the Chicagoland area together to work on public policy issues.

ADAPTATION

Climate adaptation involves adjustments to major systems to better respond to expected events and their effects. Deciding which systems to adjust, what changes should be made, and which to prioritize requires an accurate understanding of local assets and risks, and collaboration between diverse stakeholders including community-based organizations, government entities, local businesses and corporate partners, industrial associations, and philanthropic organizations.

In its 2021 Chicagoland Region Climate Action Plan, the Metropolitan Mayors Caucus elevated five climate adaptation objectives for cities to consider while developing their climate action strategies and policies. The 2022 CAP embraces an evidence-based approach to these objectives for the development of appropriate adaptation and resilience plans.

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.

No matter the scope, community-level or citywide, transformational climate adaptation will reflect local priorities and practice meaningful community engagement throughout the design, implementation, and evaluation of actions.

Suggested First Next Steps

1. Develop a Chicago Heat Vulnerability Index and other relevant vulnerability indices
2. Develop an extreme weather community response plan to serve as a foundation for the development of community-led resiliency systems and community assets

3. Enhance urban forestry management and administration of Chicago landscaping processes by increasing the planting and maintenance of native tree and vegetative plants, which offer climate and biodiversity benefits, through community partnerships
4. Encourage owners and operators of key infrastructure systems to perform climate risk analysis to determine how climate will impact their systems
5. Conduct equity assessments of current community preparedness strategies related to climate risk
6. Develop equity risk criteria for evaluating the performance of adaptation plans and actions
7. Develop an equity-centric compliment to City-sponsored emergency response volunteer workforce programs

RESILIENCE

Resilience describes the capability of a system to withstand and recover from an adverse event. Resilience is important because it addresses the direct needs of local communities. Given Chicago's vibrant diversity, there cannot be one solution for all neighborhoods. Heat waves, flooding, and other climate and weather events each affect the broader Chicago community differently. The need to address these problems varies widely and requires that existing and future climate risks be well understood, monitored, and considered in planning and policy development. Governments and institutions are generally well-equipped to understand the risks or impacts that affect them. Resilient planning, however, must go further to engage a network of relevant local stakeholders who can contextualize efforts in terms of the community's unique needs and assets.

Climate resilience is often associated with severe events – like heat waves, droughts, hurricanes, or wildfires. However, the best resilience planning also accounts for common, less extreme events, like flooding, worsening water and air quality, and migration caused by the impacts of climate change. The best climate resilience plans for Chicago residents are those designed to build the capacity of systems, agencies, communities, businesses and residents to withstand and perhaps avoid climate disasters occurring in slow motion across the City that may not rise to the level of an emergency declaration according to county or federal standards.

Effective resilience planning involves:

- Maintaining access to life essential services: energy, food, water, shelter, and healthcare
- Ensuring reliable access and operating capacity for critical infrastructure such as renewable energy, battery storage, and telecommunication assets
- Engaging residents in the process of assessing community assets, risks, and needs
- Investing in the redevelopment of existing or construction of new facilities that flexibly meet community-identified needs for resilience
- Providing accessible, culturally relevant, and understandable educational materials about City-sponsored services and programs
- Supporting and empowering local communities and vulnerable populations to assist themselves in various types of crises – especially, the elderly, young children, the sick, and low-income populations
- Integrate policies with climate change risks and hazards in mind

- Developing policies and social infrastructure to provide or improve emergency preparedness and communication among agencies, first-responders and local community organizations
- Offering diverse transportation and access options to support residents of varying physical ability

Extreme weather events have shown that resilience is an essential component of any climate action plan. Resilience efforts address the asset, neighborhood, and individual levels of how to deal with climate impacts. Resilience supports sustainable development and the construction of better, more durable physical, social and local neighborhood systems, like resilience hubs. It will take a combined and coordinated effort that centers equity to effectively and affordably address the issue of climate change. Building a resilient community not only helps to protect Chicagoans, it also generates beneficial economic activity. Investments in resilience stimulate investments in jobs and infrastructure that can uplift entire communities, or help communities uplift themselves. Effective municipal planning must intentionally protect and strength community resilience to ensure residents and businesses can adapt, plan for, and thrive in the face of a changing climate. The message is clear: Investment in infrastructure, communication, and community-driven processes brings greater resilience and secures a more sustainable, stable, and prosperous future.

Suggested First Next Steps

1. Enhance urban tree canopy expansion through policy and opportunities for community-participation
2. Develop adaptation and resilience equity evaluation framework, actions and metrics
3. Develop a nature-based solutions toolkit and evaluation framework for adaptation and resilience actions
4. Develop benchmarking for Chicago climate hubs base kit programming
5. Support resiliency projects that support placemaking such as the community-led transformation of impermeable spaces such as school yards into parks or garden spaces

LOOKING AHEAD

A truly resilient city is one that not only adapts and performs during stable periods but recovers safely and effectively after challenges (Resilient Chicago). A city's ability to cope with climate change should be defined by the ability of its residents, communities, institutions, businesses, and systems to endure, adapt, and grow despite any sudden or slowly unfolding shocks and any lingering stresses. The hazards and impacts associated with climate change require policy changes, engagement with frontline and other communities, and strategic and appropriate infrastructure investments designed to protect our whole community- people, natural systems, and our built environment.

Proactive and consistent collaboration between community members, local government, neighboring community areas, utility partners, and other stakeholders can begin immediately. Led by values of equity, mutual respect, and accounting for cumulative burden, local government can facilitate spaces to deliver the most affordable and effective climate and safety solutions Actions must follow an ongoing cycle of preparation, response, evaluation, and revision. It is a dynamic, participatory process that should be revised over time based on measured progress, and technological advancements. Through meaningful and decision-guiding engagement, communities, local government, business, and other stakeholders can build local capacities to adapt to climate impacts while also innovating in policy and development. Cities that incorporate adaptation and resilience within existing planning processes will be best positioned to thrive through a new era of climate change.