Chicago Metropolitan Agency for Planning

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MEMORANDUM

To: CMAP Board and MPO Policy Committee

From: CMAP Staff

Date: September 25, 2024

Subject: Update on the Comprehensive Climate Action Plan for the greater Chicago area

Action Requested: Information and Discussion

CMAP seeks to update the CMAP Board and MPO Policy Committee on the development of the Comprehensive Climate Action Plan for the greater Chicago area. Since the last update in the spring, CMAP has finalized the greenhouse gas (GHG) inventory, initiated stakeholder engagement and research, and selected a tool to quantify GHG emission reductions. CMAP seeks to inform the CMAP Board and MPO Policy Committee on the progress to date and engage in a discussion about opportunities, challenges, and priorities for the CMAP region within this larger planning geography.

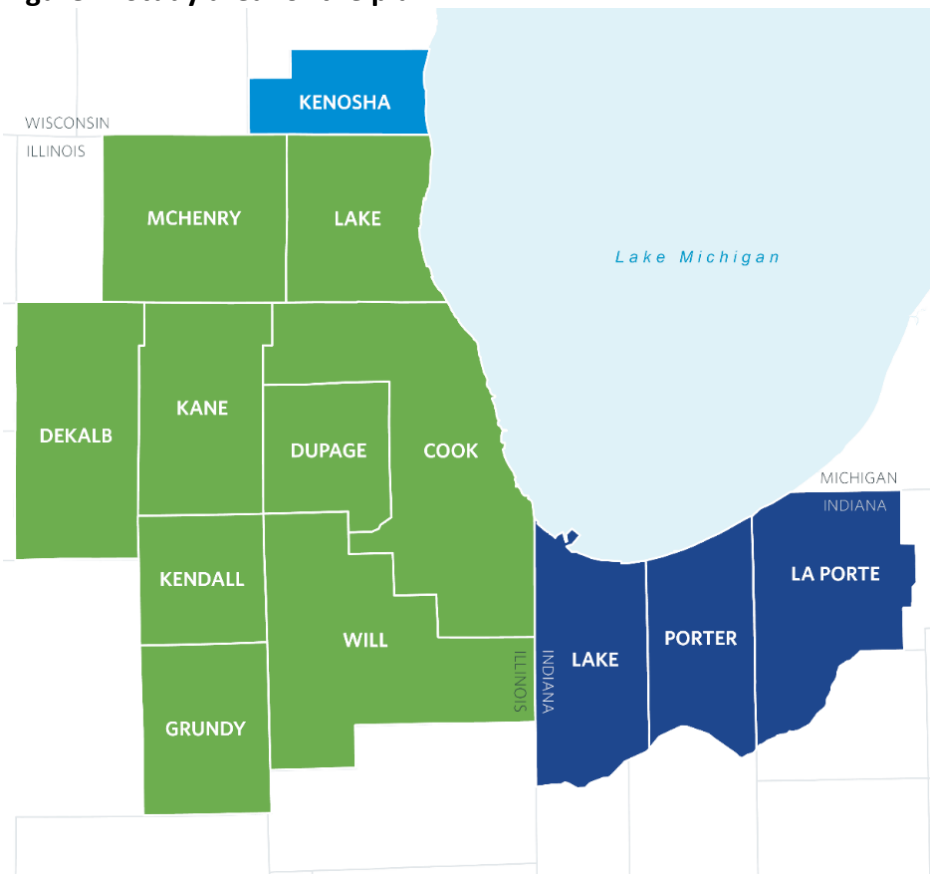
Project overview

CMAP has partnered with the Metropolitan Mayors Caucus (MMC) and Northwestern Indiana Regional Planning Commission (NIRPC) to update and expand existing regional climate mitigation plans to address GHG emissions and establish reduction measures throughout the greater Chicago region, including parts of Illinois, Indiana, and Wisconsin. The plan is supported by a Climate Pollution Reduction Grant, a U.S. Environmental Protection Agency (USEPA) initiative to provide funding to states and metropolitan statistical areas to develop and implement plans to reduce GHG emissions. This national program has enlisted 46 states and 82 metropolitan areas to develop climate action plans and has funded $4.6 billion in projects to support emissions reduction, including a $430 million grant to the state of Illinois.

CMAP is currently leading the development of one of the key deliverables -- a comprehensive climate action plan (CCAP), with assistance from MMC to assess workforce needs and NIRPC to engage northwest Indiana stakeholders. CMAP and partners worked to confirm participation throughout the 14-county metropolitan statistical area and recognized the need to change the

geography to fully include the NIRPC planning area. As a result, the final study area for the plan is composed of 13 counties – nine counties in Illinois, three in Indiana, and one in Wisconsin (Figure 1).

Figure 1. Study area for the plan

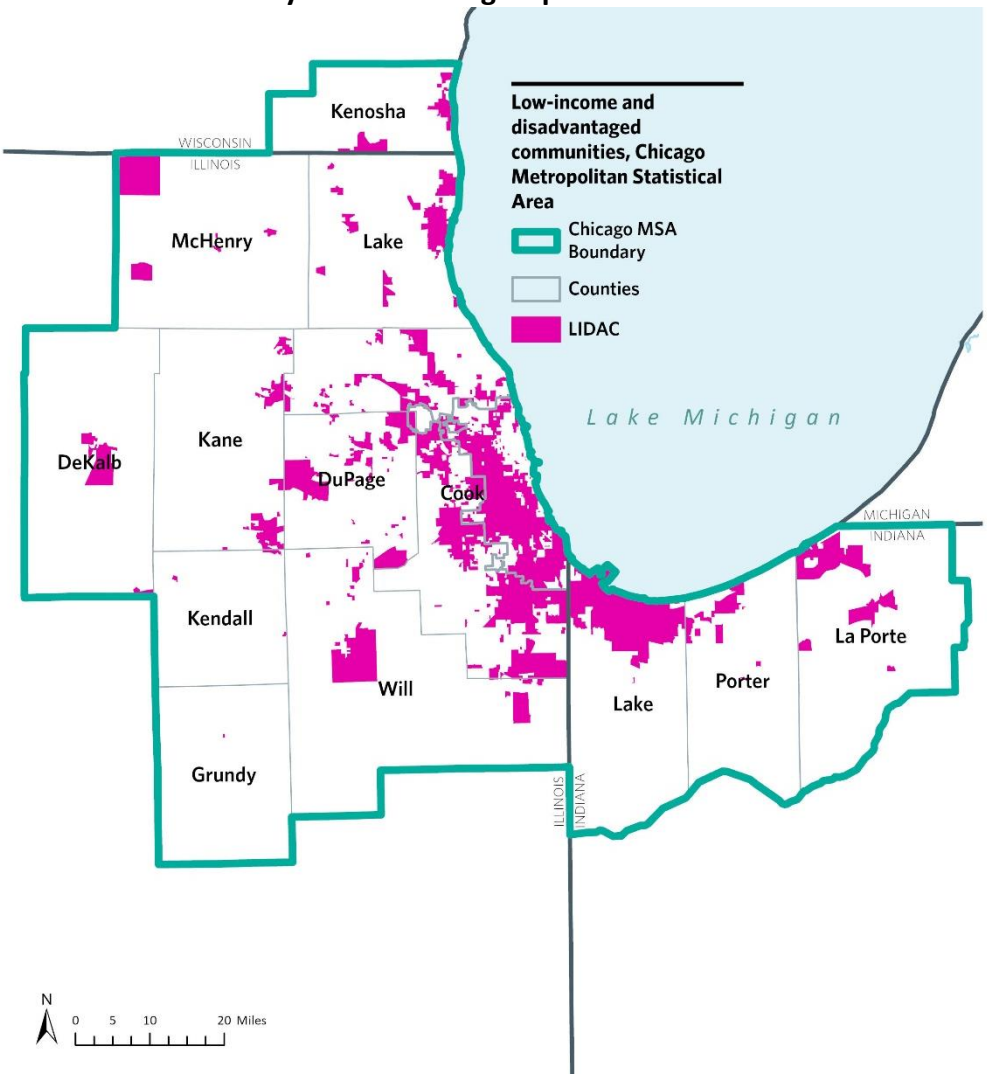


Source: CMAP, 2024.

To meet the USEPA requirements, the plan must engage a broad array of stakeholders, estimate the effectiveness of potential reduction measures, and lay out a strategy to address all significant GHG sources, sinks, and sectors. The goal of the plan is to identify the reduction measures needed in the greater Chicago region to help the nation achieve the national goals of 50-52 percent below 2005 levels by 2030 and net-zero emissions no later than 2050. Per grant requirements, the plan will identify GHG reduction targets and establish targets for each sector. It will also assess the benefits that could be achieved through the reduction of criteria air pollutants as well as co-benefits to low income and disadvantaged communities that are marginalized, underserved, and overburdened by pollution (Figure 2).

Given that the study area does not coincide with a single governmental jurisdiction, the plan will not be formally adopted and will instead serve as a framework to inform planning efforts at the MPO and local government levels as well as needed action from the federal and state levels. Following CCAP completion and submission to USEPA by December 1, 2025, CMAP staff will work with the CMAP Board, MPO Policy Committee and working committees to learn from the process, identify beneficial paths forward, and confirm implementation priorities for the CMAP region.

Figure 2. Low-income and disadvantaged communities in the planning area, defined by CEJST and EJScreen by census block groups



Source: CEJST, November 2022, and EJScreen, June 2023, via IRA Disadvantaged Communities Map.

Stakeholder engagement

CMAP has launched an engagement plan to leverage the expertise from different organizations to identify reduction measures that are effective, achievable, and equitable and build momentum to implement the plan. This includes a steering committee composed of regional implementers, subject matter experts, and leaders from low income and disadvantaged communities across the 13-county planning area. The steering committee held its first meeting on June 11, 2024, and will provide overall guidance on plan development and implementation. Carolyn Schofield represents the CMAP Board on steering committee.

Supporting the steering committee's work are four working groups. Three of the working groups are focused on the largest emission sectors – buildings, transportation, and industry – and one working group is focused on ensuring equity is integrated in the planning process and reduction measures. The working groups will assist by reviewing and proposing strategies,

goals, and targets and sharing data and resources. The three sector working groups held their first meetings in July; the equity working group met in September.

CMAP is engaging additional groups in the planning process, including CMAP and NIRPC public bodies and committees convened by MMC. The project team will continue to coordinate and collaborate with the States of Illinois, Indiana, and Wisconsin to minimize redundancies in outreach and maximize consistency in the analysis and conclusions of the respective plans. A full list of participating organizations can be found at the end of this memo.

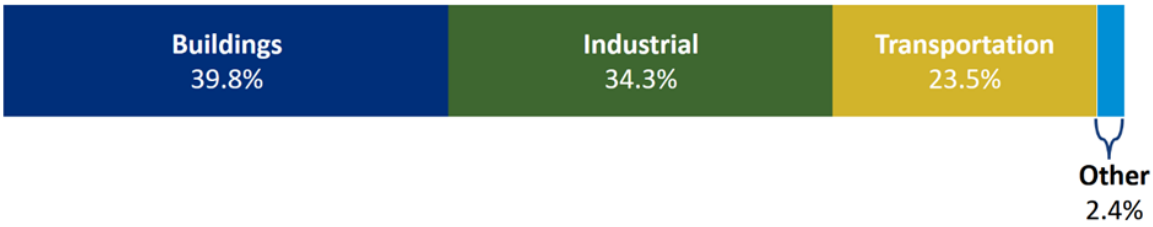
To date, the engagement process has revealed that stakeholders recognize the need to reduce emissions, and many are already engaged in critical implementation steps. Some key findings include:

- A commitment to pursue the national goal of net-zero emissions by 2050.
- A desire to attract new funding to the region for decarbonization efforts, prioritize transit and mode shift, build political support for renewable energy.
- The ability of the region to become a national leader in electrification and alternative fuels and clean industry practices.
- The importance of job creation and ensuring a just transition for impacted workers.
- The need to overcome several obstacles including funding, technological challenges, capacity, misinformation, and lack of political/public support, awareness, and urgency around the issue of climate change.

Greenhouse gas inventory

Identifying and quantifying GHG emissions sources and sinks is critical to the planning process. The 2020 Greenhouse Gas Inventory[i] covers emissions across 13 counties and from seven sectors: transportation, residential, commercial and institutional buildings, industry, energy generation, agriculture, waste, and water. In 2020, the 13 counties produced approximately 166 million metric tons of carbon dioxide equivalent (MMT CO2e) of GHG emissions (Figure 3). The inventory also estimates carbon dioxide equivalent (CO2e) removed due to carbon sequestration of trees, forestlands, and wetlands within the region. Carbon sequestration is estimated to reduce emissions by 2.74 MMT CO2e annually.

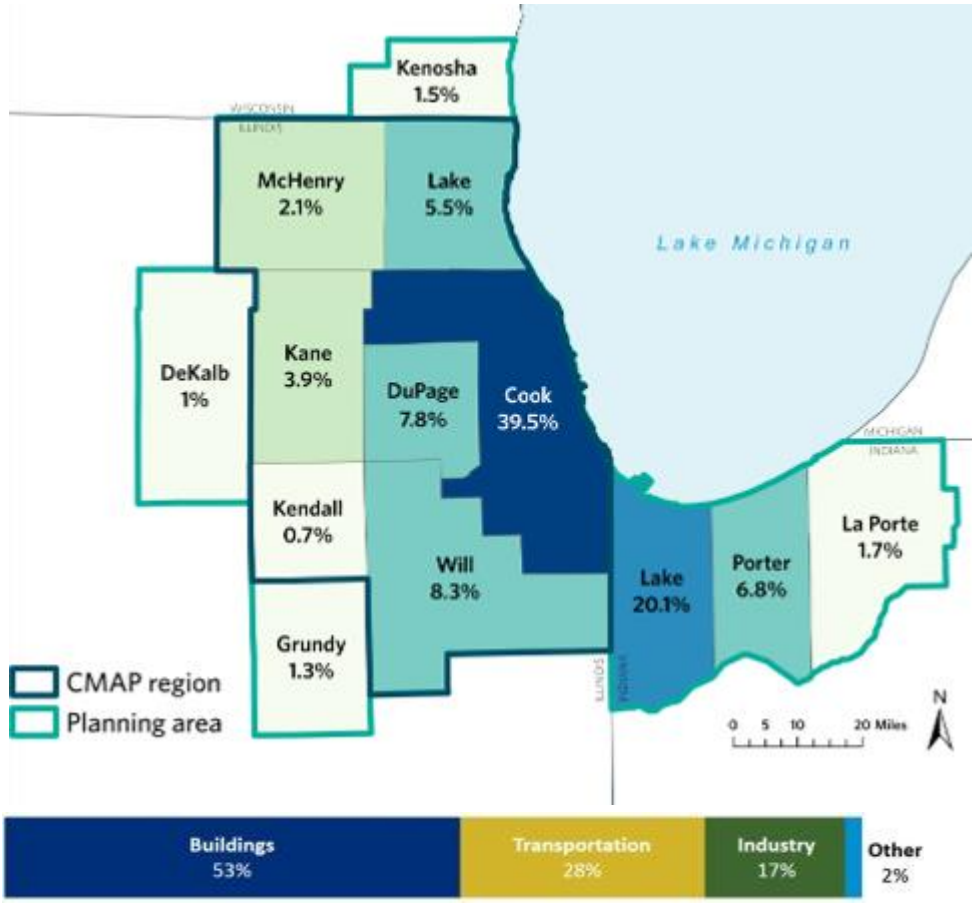
Figure 3. Greenhouse gas emissions in the greater Chicago area by sector, 2020



Source: CMAP, 2024.

CMAP's jurisdiction produced approximately 68 percent of the total emissions in the inventory (Figure 4). More building and transportation emissions are generated in the CMAP region whereas northwest Indiana produces more industrial emissions.

Figure 4. Focus on CMAP's portion of the GHG inventory for the greater Chicago area, 2020.



Reduction measures

To reach the national emission reduction goals, an array of reduction measures will be needed across all sectors. Regardless of the sector, the measures generally fall into three main approaches:

1. **Avoid or use less energy.** Increasing energy efficiency can be done using a variety of approaches. For example, in the building space, it could mean improvements to the building envelope to reduce heating loss. In the transportation space, it could include practices to move trips to lower energy forms, such as taking transit, walking and biking.
2. **Use low carbon solutions.** This approach focuses on shifting the energy source to lower carbon emitting sources. This includes renewable energy, low carbon fuels, and electrification. Switching from on-site combustion to electricity is more efficient and reduces greenhouse gas emissions. For example, gasoline-powered vehicles waste about 80 percent of their energy due to various inefficiencies, while electric vehicles only lose 11 percent of their energy.[ii]
3. **Sequester emissions.** Natural lands and assets along with technological approaches can be used to remove greenhouse gas emissions from sources that are particularly hard to eliminate via the above approaches.

There are synergies between these approaches. The transition to using electricity for more activities will increase the demand on our electric grid. ComEd is currently anticipating that the demand could increase by 2 or 2.5 times to support the electrification of the transportation, industrial, and building sectors, even with a reliance on low-carbon fuels like hydrogen and biofuels.[iii] However, this demand can be reduced by avoiding or using less energy.

Request

Staff will engage the board in a discussion about the strategies being considered.

Participating organizations

- Access Living
- BOMA Chicago
- Brown Faces Green Places
- Calumet Collaborative
- Chicago Environmental Justice Network
- Citizens Utility Board
- City of Aurora
- City of Chicago Department of Buildings
- City of Chicago Department of Environment
- City of Chicago Department of Transportation
- City of Gary
- City of Kenosha
- City of Rolling Meadows
- Civic Committee of the Commercial Club
- Clean Power Lake County
- Climate Jobs Illinois
- ComEd
- Cook County Bureau of Economic Development
- Cook County Department of Environment and Sustainability
- Cook County Department of Transportation and Highways
- Chicago Transit Authority
- Current
- Discovery Partners Institute
- Drive Clean Indiana
- DuPage County Environment and Sustainability
- DuPage County Division of Transportation
- Earth Charter Indiana
- ECOLAB
- Elevate
- Elevated Chicago
- Faith in Place
- Farmworker and Landscaper Advocacy Project
- Gary Public Transit Corporation
- IFF
- Illinois Green Alliance
- Illinois C-PACE
- Illinois Department of Transportation
- Illinois Environmental Council
- Illinois Housing Development Authority
- Illinois International Port District
- Illinois Manufacturing Excellence Center
- Illinois Tollway
- Kane County
- Lake County, IN
- Lake County, IL Division of Transportation
- Little Village Environmental Justice Organization
- Loyola University
- MacArthur Foundation
- McHenry County Division of Transportation
- Metra
- Metropolitan Mayors Caucus
- Metropolitan Planning Council
- Northwest Indiana Forum
- Northwestern Indiana Regional Planning Commission
- P33
- Pace Suburban Bus
- Regional Transportation Authority
- Respiratory Health Association
- Southeast Environmental Task Force
- Steel Manufacturing Simulation and Visualization Consortium
- UIC Public Health
- Urban Land Institute
- USEPA Region 5
- Will County
- World Business Chicago

[i] Pandemic-related changes in transportation and energy consumption make 2020 an anomalous year for some datasets, but it is still a viable year for this analysis. The inventory is built using modeled and reported data from various time scales and geographies, which reduces the impacts of short-term fluctuations, such as those experienced in 2020. The inventory results are comparable to past efforts to study emissions in the region.

[ii] Karen Kirk, "Electric vehicles use half the energy of gas-powered vehicles," Yale Climate Connections, January 2024, https://yaleclimateconnections.org/2024/01/electric-vehicles-use-half-the-energy-of-gas-powered-vehicles/

[iii] Energy & Environmental Economics, Inc. "Illinois Decarbonization Study: Climate and Equitable Jobs Act and Net Zero by 2050," December 2022, Prepared for Commonwealth Edison (ComEd), https://www.ethree.com/wp-content/uploads/2022/12/E3-Commonwealth-Edison-Decarbonization-Strategy-Report.-December-2022-1.pdf