Chicago Metropolitan Agency for Planning

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CLIMATE COMMITTEE WORKSHOP

AGENDA - FINAL

Thursday, October 24, 2024

1:00 PM

WORKSHOP

Please note this meeting is fully remote. You can join from your computer, tablet or smartphone. https://us06web.zoom.us/j/87053255417?pwd=c9jsRzlRKAcROcxLgPnc4vF4auC0zY.1

CMAP provides the opportunity for public comment. Individuals are encouraged to submit comment by email to info@cmap.illinois.gov at least 24 hours before the meeting. A record of all written public comments will be maintained and made publicly available.

The total cumulative time for public comment is limited to 15 minutes, unless determined otherwise by the Chair. Public comment is limited to three minutes per person unless the Chair designates a longer or shorter time period. Public comments will be invited in this order: Comments from in person attendees submitted ahead of time; comments from in-person attendees not previously submitted; comments from virtual attendees submitted ahead of time; and comments from virtual attendees not previously submitted.

To review CMAP's public participation policy, please visit https://www.cmap.illinois.gov/committees.

If you require a reasonable accommodation or language interpretation services to attend or join the meeting, please contact CMAP at least five days before the meeting by email (info@cmap.illinois.gov) or phone (312-454-0400).

1.0 Introductions

2.0 Announcements

2.01 CMAP Updates

2.02 New Members

3.0 Items for discussion

3.01 Regional Climate Action Plan 24-435

PURPOSE & ACTION: CMAP staff will provide an update on the Comprehensive Climate Action Plan for Greater Chicago and engage members in a discussion about the emission reduction strategies being considered for the agriculture, water, and waste sectors as well as strategies for carbon sequestration.

ACTION REQUESTED: Discussion

Attachments: Climate Committee_CAP Memo

3.02 Clean Energy to Communities 24-436

PURPOSE & ACTION: CMAP staff will update the Climate Committee on the progression of the Clean Energy to Communities project by providing an overview of the project, a status update, and how it aligns with the Climate Action Plan.

ACTION REQUESTED: Discussion

Attachments: Clean Energy to Communities

3.03 Regional Vision Plan 24-437

PURPOSE & ACTION: CMAP staff will discuss the structure and benefits of a new, untried approach to fulfilling CMAP's federal and state metropolitan planning responsibilities. Staff will gather feedback about key elements to include in an upcoming regional vision.

ACTION REQUESTED: Discussion

Attachments: Regional Vision Plan

4.0 Member Updates

5.0 Public Comment

6.0 Next Workshop

The next workshop of the Climate Committee will occur on February 27, 2025 at 1:00pm.

7.0 Close of workshop

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MEMORANDUM

To: CMAP Climate Committee

From: CMAP Staff

Date: October 17, 2024

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

Action Requested: Discussion

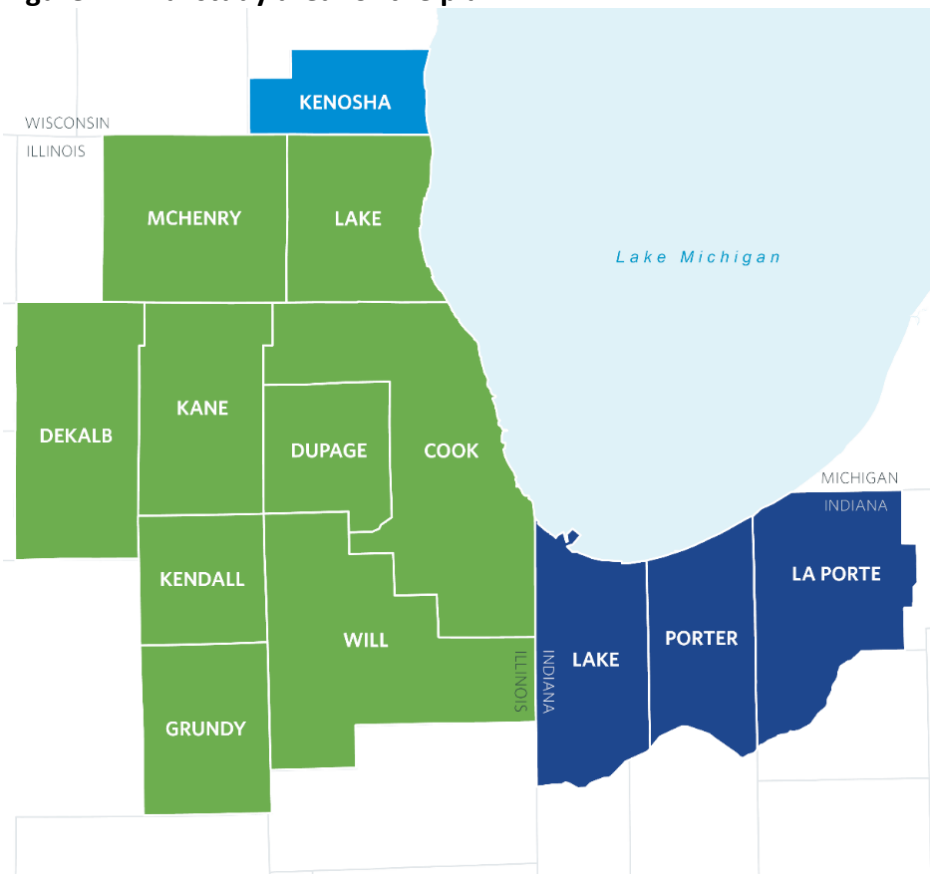
CMAP seeks to update the CMAP Climate Committee on the development of the Comprehensive Climate Action Plan for the Greater Chicago area. Since the last update in the summer, CMAP has finalized the greenhouse gas (GHG) inventory, initiated stakeholder engagement and research, and selected a tool to quantify GHG emission reductions. At the October meeting, CMAP will inform the CMAP Climate Committee on the progress to date and engage in a discussion about the emission reduction strategies being considered for the agriculture, water, and waste sectors as well as strategies for carbon sequestration.

1. Project updates

1.1. Planning area

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, La Porte County, IN, was added to the planning area. Jasper and Newton Counties in Indiana were removed from the original planning area due to a lack of interest in the planning process. 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. Final study area for the plan



Source: CMAP, 2024.

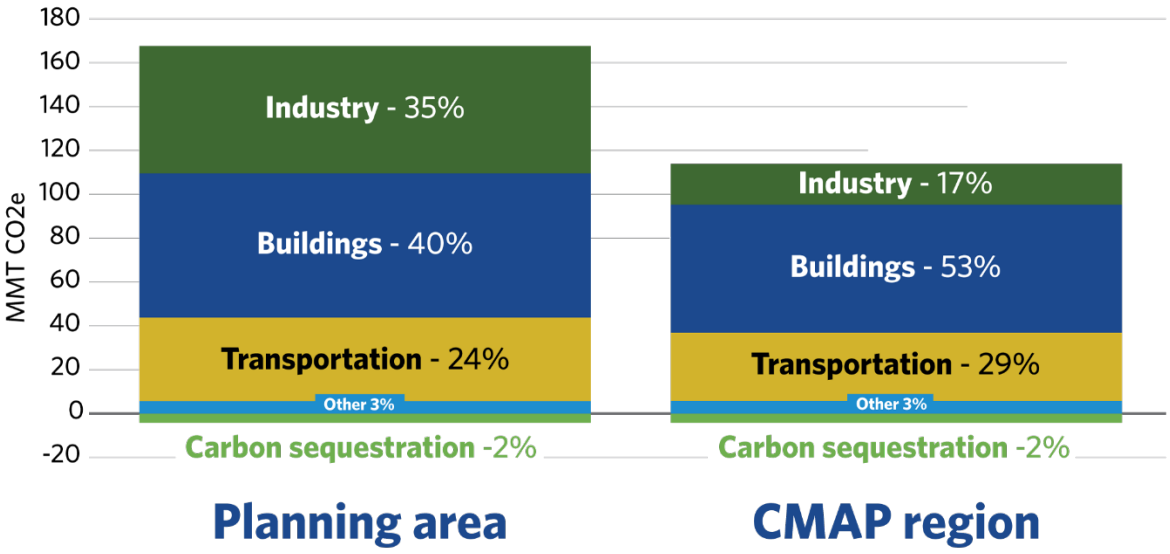
Given that the study area does not coincide with a single governmental jurisdiction, the plan will not be formally adopted in the CMAP region and will instead serve as a regional framework to inform planning efforts at the MPO and local government levels as well as needed action from the federal and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

1.2. Greenhouse gas inventory

CMAP staff updated the 2020 Greenhouse Gas Inventory[i] for the 13-county planning area. In 2020, the 13 counties produced approximately 166 million metric tons of carbon dioxide equivalent (MMT CO2e) of GHG emissions (Figure 2). The inventory also estimates the carbon dioxide equivalent (CO2e) removed due to carbon sequestration of trees, forestlands, and wetlands within the planning area. Carbon sequestration is estimated to reduce emissions by 2.74 MMT CO2e annually.

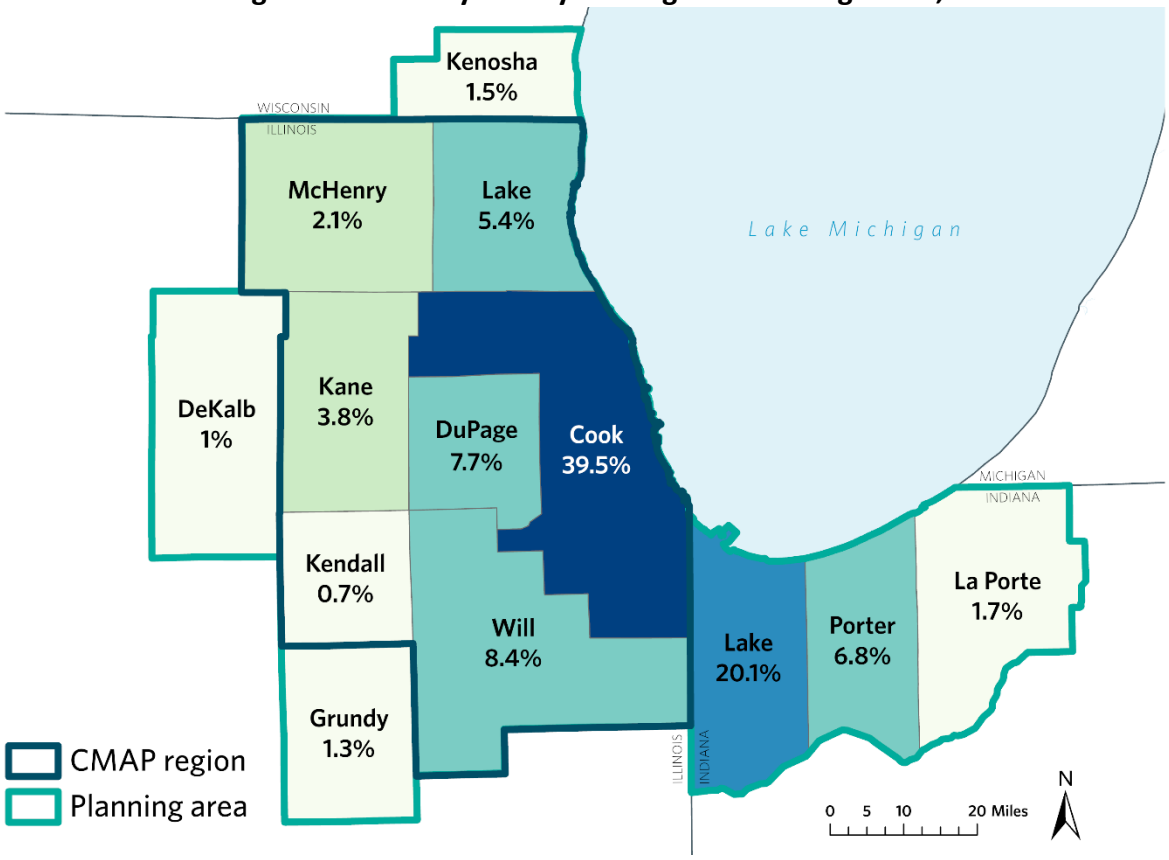
CMAP's jurisdiction produced approximately 68 percent of the total emissions in the inventory. More of the building and transportation emissions are generated in the CMAP region, whereas northwest Indiana produces more industrial emissions (Figure 2).

Figure 2. Greenhouse gas emissions in the greater Chicago area and CMAP region by sector, 2020



Source: CMAP, 2024.

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



Source: CMAP, 2024.

2. Emissions overview for agriculture, waste, and water sectors

With specialized working groups focused on buildings, industry, and transportation, the project team is seeking Climate Committee feedback on the agriculture, waste, and water sectors. Together, these sectors make up 2.4 percent of emissions (4.79 MMT of CO2e) across the 13-county planning area (Figure 4). Key findings from the project team's research and analysis of emissions from these sectors are presented below.

Figure 4. GHG emissions from other sectors, 2020

Source: CMAP, 2024.

2.1. Agriculture

Agricultural emissions account for 1.29 percent of total emissions in the region (2.14 MMT of CO2e). The 2020 GHG inventory quantifies emissions from livestock and crop production in the planning area, which includes fertilizer use, soil management, and enteric fermentation (methane from livestock). Emissions from agricultural equipment are classified under the transportation sector. Agricultural equipment emissions are equivalent to 0.08 percent of the transportation emissions or 0.19 percent of the total emissions within the region (0.32 MMT of CO2e).

Most emissions come from fertilizer application and soil management. Over 91 percent of agriculture emissions are attributed to the use of synthetic, organic, and manure fertilizers, as well as soil management practices like liming, crop residue retention, and the drainage of organic soils. Enteric fermentation (methane generated from livestock digestion) accounts for eight percent of agriculture emissions with the remaining emissions linked to field burning.

Emissions are concentrated in rural counties and primarily linked to soy and corn production. Counties with the highest agricultural emissions are DeKalb and Grundy in Illinois and La Porte County in Indiana. In 2022, the largest share of crops grown in the planning area were corn and soybeans, with DeKalb and La Porte counties having the most corn and soybean crop sales in the planning area.

Emissions are primarily influenced by climate, population, and agricultural management practices. Temperature and precipitation can significantly affect food production, cost, and demand. Population changes, dietary preferences, and agricultural management practices also play a role in crop and livestock production and associated emissions. Practices such as regenerative agriculture and the use of cover crops that capture carbon can lead to healthier soil and livestock and reduced emissions. On the other hand, monoculture farming,[ii] encouraged by crop protections and subsidies, can result in high fertilizer use and the need for more carbon-intensive land management. There is mixed research on whether urban agriculture and community gardening can lead to reduced emissions, and it largely depends on

the materials used, the crops being grown, and their location and scale. Some studies indicate urban agriculture can reduce emissions by reducing the share of land needed for agriculture production,[iii] as well as the distance food travels that cuts down transportation-related emissions, whereas other studies indicate urban agriculture is six times more carbon-intensive than traditional agriculture.[iv]

Potential reduction strategies

- Use technology to improve efficiency and productivity in agricultural activities
- Electrify agricultural equipment
- Reduce fertilizer use
- Expand regenerative agriculture practices and encourage climate-smart farming practices, such as cover cropping and crop rotation[v]

2.2. Water and wastewater

Water and wastewater emissions account for 1.02 percent of total emissions in the region (1.70 MMT of CO2e). Wastewater emissions are greater than drinking water emissions, with 83 percent (1.4 MMT of CO2e) being attributed to the conveyance and treatment of wastewater. The 2020 GHG inventory quantifies emissions from the withdrawal, treatment, and distribution of drinking water and the conveyance and treatment of wastewater, including stormwater.

Energy use is connected to water volumes. With the exception of water used for power generation, most water use is connected to municipal water systems and energy is used to withdraw, treat, and distribute water. There is significant variation in energy use related to drinking water source and system size. Research suggests that drinking water facilities that rely on groundwater are likely to produce the most emissions per gallon of water, followed by facilities that produce and distribute drinking water from surface waters, like the Fox River, and Lake Michigan.[vi] Utilities that supply water from deep aquifers are likely to use more energy than those that rely on shallow groundwater given greater pumping demands. Smaller water systems typically use more energy per gallon of water. Other contributing factors include the quality of the water, treatment requirements, the condition of the supporting infrastructure, and the distance the cleaned water needs to travel to reach its users.

Wastewater emissions are connected to water quality. Wastewater treatment requires higher energy demands and chemicals to treat wastewater prior to being discharged back into the environment.[vii] Combined sewer systems that convey wastewater and stormwater to treatment plants have higher treatment volumes and corresponding energy demands. Cook County is primarily serviced by a combined sewer system and has the most total and per-capita wastewater emissions within the planning area.

Most drinking water treatment and distribution processes use electricity. Given that water treatment and distribution plants already rely on lower carbon energy sources, facilities will need to concentrate on emission reduction strategies that improve system and operational efficiencies. Aside from creating heat during water treatment processes and the use of natural gas or diesel-powered generators to keep pumps and other systems running in the event of power loss, few operations rely on fossil fuels.

Potential reduction strategies

- Upgrade technology to improve the efficiency of water and wastewater utility systems and operations
- Shift drinking and wastewater operations to clean energy sources
- Conserve water and minimize water loss
- Capture and reuse biogas produced from wastewater treatment

2.3. Waste

Waste emissions account for 0.58 percent of total emissions in the region (0.96 MMT of CO2e). The 2020 GHG inventory quantifies emissions in this sector resulting from waste management, including landfills and other waste processing and disposal sites. National research indicates that roughly one-third of waste in landfills is compostable.[viii] Similar trends are found in the planning area's most populated county, where residential municipal waste is approximately 38 percent organic, and industrial, commercial, and institutional waste is 29 percent organic.[ix] More research would be needed to determine if and how the greater Chicago region compares.

Emissions do not represent the total waste produced in the region. Most of the region's waste is sent to landfills outside of the 13-county region. This means that the GHG inventory reflects a lower estimate of emissions from the waste sector. However, most of the waste generated in the region is disposed of nearby and will be included in state CAPs. For example, suburban Cook County (excluding the City of Chicago) hauls waste 40 to 200 miles outside of Cook County on average. Between 2013 and 2016, Cook County hauled 2.2 million tons of municipal waste and 238,00 tons of construction and debris to landfills in Indiana, outside of the planning area.

Emissions come from active and closed landfills. There are five active and 13 closed landfills in the planning area. Our largest active landfills are located in DeKalb and Lake Counties in Illinois. The two Lake County facilities are scheduled to close in 2027 and the landfill in Will County is scheduled to close in 2034. Closed landfills still produce emissions as waste continues to emit methane for decades as it decomposes.

The waste sector is the planning area's largest producer of methane. Across the state of Illinois, food waste accounts for 20 percent of municipal waste and, when it decomposes, it releases methane.[x] Methane is a potent greenhouse gas with a shorter lifespan than carbon dioxide, but it is 84 times more effective at trapping heat in the atmosphere over a 20-year period.[xi]

Potential reduction strategies

- Capture and reuse biogas produced from landfill sites
- Divert organic waste from the waste stream
- Reuse building materials (e.g., encourage deconstruction projects, establish construction reuse warehouses, update C&D recycling ordinances)

While these strategies will help reduce emissions from the landfills that are within the planning area, they will likely have a greater impact on reducing emissions outside of the planning area,

given the significant amount of waste that is produced in the planning areas is sent to landfills outside of it.

3. Carbon sequestration

The region's natural ecosystems, including forests, prairies, oak savannas, and wetlands, as well as urban tree canopy, store emissions and remove them from the atmosphere. In 2020, the planning area sequestered 2.74 million metric tons of carbon dioxide equivalent (MMT of CO2e). The 2020 GHG inventory estimates carbon sequestration emissions by estimating emissions or reductions associated with activities such as afforestation, deforestation, and land management practices. State level data from the USEPA's State Inventory Tool (SIT) were downscaled to reflect local land-use patterns based on the proportions of land use types within each county of the MSA. Emerging technologies, like direct air capture (DAC) and carbon capture and storage (CCS), are also methods for removing GHGs from the atmosphere.[xii] Negative emissions technologies are not included in the emissions inventory due to data limitations but could be used in the planning area.

Ecosystem health is connected to carbon sequestration potential. Future carbon sequestration potential will require improving and maintaining the health of existing ecosystems, in addition to expanding natural lands. Healthier and more biodiverse habitats store more carbon than less diverse ones.[xiii] Relatedly, the location and connectedness of natural lands also impact its ability to store and capture carbon. Ecosystem fragmentation, which disconnects ecosystems and is primarily driven by human activity like development, is present throughout the planning area. Over 81 percent of the planning area is developed.[xiv] Ecosystem stressors from climate change can also threaten ecosystem health and, therefore, the region's ability to maintain and expand carbon storage capacity through natural lands over time.

Trees and wetlands ecosystems can increase sequestration. In 2020, 91 percent (2.5 MMT CO2e) of the planning area was generated from tree and wetland carbon sequestration. Finding solutions that improve and expand healthy tree and wetland ecosystems will be critical for the planning area, given that most of the carbon sequestration is from trees and wetlands. Re-establishing prairie ecosystems may also be a potential solution. Some research suggests that grasslands and prairies can be more effective at storing carbon than establishing new trees in regions that did not historically support forest ecosystems.[xv] In the Illinois portion of the planning area, the pre-development ecosystems were primarily oak savannas, an ecosystem of prairies and forests with 10-50 percent tree canopy.

Emerging technologies have the potential to reduce emissions. Technologies that remove GHGs may hold promise but need to be balanced against perceived impacts to public health and the environment. The method for managing and transporting captured C02 depends on the industry and jurisdiction. Currently, underground CO2 storage underground is used in enhanced oil recovery which not only extends the life of extractive oil and gas fields but also results in increased CO2 emissions.[xvi] In Illinois, the SAFE CCS Act has placed a moratorium on CO2 pipelines until 2026.[xvii] Meanwhile, Indiana supports carbon capture and storage (CCS), which includes the transportation of CO2 through pipelines.[xviii] CCS is also a component of the Midwest Alliance for Clean Hydrogen's "MachH2" hydrogen hub project that received $1 billion

from the Department of Energy.[xix] While sequestration projects do present environmental risks to groundwater and surrounding ecosystems, the USEPA notes that well-planned, well-managed, and well-monitored carbon sequestration projects can be safe. Along these lines, Illinois' SAFE CCS Act has established one of the country's most robust regulatory frameworks for future CCS.

Potential carbon sequestration strategies

- Increase or expand existing natural lands
    - Restore and protect forests, prairies, and wetlands
    - Increase tree canopy
    - Improve ecosystem health and reduce fragmentation
    - Rewild agricultural land and brownfields
    - Integrate native plants into open spaces (e.g., public parks and schoolyards)
- Sustainable land management
    - Promote infill development
    - Use conservation design or low-impact development standards
    - Improve soil
    - Use climate-sensitive agriculture land management practices (e.g., no-till or low-till operations, planned grazing techniques)
- Create artificial carbon storage
    - Invest in carbon capture technology and systems (e.g., direct air capture, carbon pipelines, and carbon mineralization)

4. Other project updates

4.1. Guiding principles

Drawn from discussions at the first steering committee meeting as well as a post-meeting survey, the CAP team has finalized the guiding principles to help us navigate the planning process:

- **Commit to zero.** Embrace transformative strategies that accelerate the region's progress toward net zero emissions by 2050 and avoid the worst impacts of climate change.
- **Center equity**. Engage underserved and marginalized communities to reduce existing disparities, design strategies to maximize benefits, and advance an inclusive energy transition.
- **Plan for action.** Prioritize actions that move the region towards both short-term goals and long-term climate prosperity. Collaborate with stakeholders to ensure plan recommendations are relevant, realistic, and actionable.
- **Grow a clean economy.** Harness the economic opportunities of climate action to foster innovation, create quality jobs, and position the region as a leader in the clean energy economy.

4.2. An equity-centered approach to develop the plan

Because the impacts of climate change are not felt equally across the region and globe, an equity-centered approach to climate action is needed. The approach for developing the plan centers the priorities and needs of low-income and disadvantaged (LIDAC) communities in the planning area. Specifically, the planning process will focus its engagement on LIDAC communities to help identify and prioritize reduction strategies, minimize unintended consequences from reduction measures, and analyze potential benefits (such as air pollution and job creation) from plan implementation.

Community engagement
Low-income and disadvantaged communities are already grappling with the worst effects of climate change. The project team will center these voices in the planning process to ensure that the plan reflects community priorities and challenges. Community engagement efforts will focus on meeting the following objectives:

- Communicating with residents about GHG emission reduction measures and opportunities for their communities
- Identifying and incorporating community priorities into the plan
- Understanding how communities will positively or negatively be impacted by the clean energy transition (lower utility bills, less air pollution, etc.)

The project team will use a variety of engagement activities to encourage resident input, including a digital survey, community "Workshops in a Box," focus groups, and interviews.

Equity working group
The Plan's equity working group includes community-based organizations, labor representatives, and subject matter experts. Some members also serve on the steering committee and sector working groups to ensure that equity is discussed at all levels of the project.

The equity working group will review and advise on:

- Emissions reduction benefits and challenges for low-income and disadvantaged communities
- Community engagement tactics
- Plan priorities and strategy
- Challenges such as energy affordability, housing insecurity, environmental injustices, and employment

The equity working group held its first meeting in September. Below are highlights from members during the meeting discussion.

- Community-based organizations understand how policies and practices play out on the ground, and some organizations have been fighting to eliminate the negative consequences of transportation and industrial emissions for decades. The group possesses lived experience with environmental justice issues and advocacy (coal ash rules, carbon capture regulations, etc.). Some members identify as residents of

environmental justice communities or "sacrifice zones," who face disproportionate rates of cancer, asthma, and other health conditions.[xx]

- Members are concerned about communities near concentrated sources of air pollution and corresponding health impacts. Members suggested that regional emissions reporting may distort how emissions are experienced on a local level. Therefore, it is import to present information that highlights the disparity of exposure.
- The group shared key engagement practices, including sharing how community input will be used, providing language translation services, holding meetings outside of working hours, and educating community members as to how different issues relate to them.
- Care should be taken to develop productive, healthy relationships with community-based organizations. Members have different experiences with public agencies, ranging from productive, working relationships to mistrust. It is clear from these interactions that it takes work to not only build relationships with community-based organizations but also to engagement with them on a meaningful level.

4.3. Building, industry, and transportation sectors

Since the last Climate Committee meeting, the project team held meetings with the three sector working groups to discuss emissions research and decarbonization strategies. Below are key findings from each working group.

Buildings working group

- Existing buildings, many of which are older, require energy efficiency and electrification retrofitting to reduce energy consumption and fossil fuel reliance. However, retrofitting has cost, technological, and workforce barriers.
- For new construction, building and zoning codes can require increasingly electrified buildings and promote more efficient development patterns.
- Many federal, state, local, and private sector building decarbonization efforts are underway in the region. It is important to understand what best practices can be scaled and what gaps exist.
- Commercial and residential buildings vary greatly in how they use energy, the technologies needed to decarbonize, regulating bodies, and the economic pressures they face. Decarbonization strategies and implementation will have to reflect these varying opportunities and challenges between the subsectors

Industry working group

- Among stakeholders, there is consensus around energy efficiency improvements as a key approach for reducing energy demand and GHG emissions at industrial sites. Stakeholders also support electrification and low-carbon fuels, feedstocks and energy sources.
- Given the high levels of energy needed at many industrial sites, electrification will put a significant strain on existing grid capacity. Collaboration and coordination with electric utilities and grid operators will be critical in facilitating industrial electrification.

- The significant financial costs currently associated with making large-scale facility changes to decarbonize are one of the main barriers facing industries and firms seeking to reduce their emissions and approaches and strategies should take this into account.

Transportation working group

- There is broad recognition that electrification will be a key strategy to reduce tailpipe emissions, but also that electric vehicles will need to rely on clean energy sources when charging to reduce upstream emissions.
- Transit and active transportation improvements can reduce emissions but also decrease the number of single-occupancy vehicles on roadways which supports congestion management. Those improvements could be financed by reinvesting revenues from congestion pricing and/or other roadway fees.
- Focusing on interconnected sectors and disciplines will be critical, especially freight transportation, energy generation, roadway design, and land use planning.

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[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] Monoculture farming is a term used to describe the practice of growing one type of crop, often corn or wheat, on agricultural land.

[iii] USDA Climate Hubs, "Urban agriculture," accessed October 11, 2024, https://www.climatehubs.usda.gov/hubs/international/topic/urban-agriculture.

[iv] Jason Hawes et al., "Comparing the carbon footprints of urban and conventional agriculture," Nature Cities 1, 164–173, January 2024, https://www.nature.com/articles/s44284-023-00023-3.

[v] Cover cropping refers to the practice of using cover crops, often grasses, legumes, and forbs, to seasonally cover soils and incorporate plant matter into the soil for enrichment at a later date. Crop rotation refers to the practice of rotating the types of crops planted on an agricultural field each year or season, which helps with soil enrichment, as well as minimizing pests and the need for chemicals.

[vi] Illinois American Water Works Association, "Water-Energy Nexus Summary Report," March 2012, https://cdn.ymaws.com/www.isawwa.org/resource/collection/82A33FB3-E26F-4EA1-932D-866A9E8E264A/FY12-0077_ISAWWA_SURVEY_REPORT_REV_lowres.pdf .

[vii] Spiru Paraschivm et al., "An overview of energy intensity of drinking water production and wastewater treatment," Energy Reports 9, no. 11, 118-123, 2023, https://doi.org/10.1016/j.egyr.2023.08.074.

[viii] Faraz Farhidi et al., "How the US Economy and Environment can Both Benefit From Composting Management," Environmental Health Insights, 2022, https://journals.sagepub.com/doi/10.1177/11786302221128454.

[ix] Cook County, "Cook County Solid Waste Management Plan 2018 Update," Prepared by Delta Institute, 2018, https://www.cookcountyil.gov/sites/g/files/ywwepo161/files/service/solid-waste-management-plan-2018-update-final.pdf.

[x] Illinois EPA, "Food Waste," accessed October 11, 2024, https://epa.illinois.gov/topics/waste-management/materials-management/food-waste.html.

[xi] In other words, the global warming potential of methane is 28 times greater than carbon dioxide over a 100-year period.

[xii] These are two separate technologies for removing carbon. Carbon capture and storage is more common with industry because it pulls carbon from concentrated CO2 whereas direct air capture doesn't require the CO2 to be concentrated and instead pulls it broadly from the atmosphere.

[xiii] Yi Yang et al., "Soil Carbon Sequestration Accelerated by Restoration of Grassland Biodiversity," Nature Communications 10, 718, February 12, 2019, https://doi.org/10.1038/s41467-019-08636-w.

[xiv] CMAP analysis of Replica parcel-level land use data.

[xv]Katherine Kerlin, “Grasslands More Reliable Carbon Sink Than Trees,” University of California Davis, July 9, 2018, https://climatechange.ucdavis.edu/climate/news/grasslands-more-reliable-carbon-sink-than-trees.
[xvi]Naomi Oreskes, “The False Promise of Carbon Capture as a Climate Solution,” Scientific American, March 1, 2024, https://www.scientificamerican.com/article/the-false-promise-of-carbon-capture-as-a-climate-solution/.
[xvii] Andrew Adams, “After Years of Controversy, Illinois Pauses CO2 Pipeline Construction, For Now,” WTTW News, accessed August 20, 2024, https://news.wttw.com/2024/07/19/after-years-controversy-illinois-pauses-co2-pipeline-construction-now.
[xviii] Great Plains Institute, “Indiana implementing carbon capture and storage technology,” 2020, https://carboncaptureready.betterenergy.org/wp-content/uploads/2020/08/IN_7_23_2020.pdf.
[xix] Energy News Network, “Advocates worry hydrogen hub will fuel environmental injustice in Northwest Indiana,” January 2024, https://energynews.us/2024/01/31/advocates-worry-hydrogen-hub-will-fuel-environmental-injustice-in-northwest-indiana/.
[xx] The Climate Reality Project, “Sacrifice zones 101,” accessed October 11, 2024, https://www.climaterealityproject.org/sacrifice-zones.

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MEMORANDUM

To: Climate Committee
From: CMAP Staff
Date: Thursday, October 24, 2024
Subject: Clean Energy to Communities
Purpose: Provide update on Clean Energy to Communities
Action Requested: Discussion

CMAP seeks to update the Climate Committee on the progression of the Clean Energy to Communities project by providing an overview of the project, a status update, and how it aligns with the Climate Action Plan. This memo provides a brief overview of the project and updates regarding stakeholder engagement and strategy development.

Project overview

Commonwealth Edison (ComEd), CMAP, and the Respiratory Health Association (RHA) have partnered to participate in the Clean Energy to Communities (C2C) In-Depth Partnerships Program. This is a competitive opportunity run by the National Renewable Energy Laboratory on behalf of the US Department of Energy. It offers local governments, community-based organizations, and utilities the chance to receive in-depth technical assistance from the national laboratories. CMAP applied for this program in 2023 and was selected as one of five communities in the inaugural cohort for this program. This initiative pairs us with Argonne and Oak Ridge National Laboratories to conduct cross-sectoral research into how the region can decarbonize the transportation sector, in line with federal decarbonization goals, by 2050. Equally as important, this program will allow us to analyze how transportation decarbonization will impact the region's electric grid.

This project is titled Reaching Net Zero: Transport-Energy Scenarios for Northeastern Illinois. It began in February and will last until 2027. ComEd, CMAP, and RHA will use Argonne and Oak Ridge's technical assistance to conduct a scenario planning exercise investigating how the CMAP region can decarbonize the transportation sector in a way that allows for the electric grid to adapt and respond accordingly. This project will be the first of its kind to conduct a joint transportation-electric grid planning exercise.

As part of this process, the C2C team will engage an array of stakeholders, model transportation decarbonization strategies, and create a final deliverable to communicate results to relevant stakeholders and implementers. The project's goal is to inform conversations (and decisions) around the benefits and tradeoffs inherent in the region's commitment to a net zero transportation sector.

CMAP's C2C initiative will harness the stakeholder engagement activities occurring as part of the development of the Comprehensive Climate Action Plan (CAP) for the greater Chicago area. As the CAP engages stakeholders in identifying GHG reduction strategies and corresponding assumptions on

implementation rates from all major emissions sources and sinks, C2C will be much more focused. Building on the CAP's findings and conclusions, C2C will benefit from Argonne and Oak Ridge's complex transportation and electric grid modeling capacity to answer detailed questions about how to best decarbonize the transportation sector.

Once complete in 2027, CMAP intends to use C2C results to advance and refine the agency's climate action planning efforts. This could include updating reduction targets and recommendations first developed in the CAP to reflect C2C modeling findings. It could also inform the agency's legislative agenda on the state and federal actions needed to reach the region's goals. Similarly, the C2C project could inform the priorities and investments of the region's long range transportation planning process.

Project updates

To date, the C2C project team has completed several key tasks including emissions scoping, attending the 2024 NREL C2C Summit, and completing a strategy development and prioritization process.

Emissions scoping. Unlike the CAP's inclusion of all GHG sources and sinks, the C2C project will focus on a subset of transportation emissions:

- On-road vehicles: passenger cars, light duty trucks, motorcycles, buses, medium- and heavy-duty trucks.
- Off-road transportation: Passenger and freight rail, rail yards and other freight associated facilities, marine vessels, and aviation.
- EV charging, alternative fuel, and petroleum/gas fuel infrastructure.

2024 NREL C2C Summit. As part of the C2C program, CMAP and its partners attended an annual C2C Summit hosted by NREL at their Colorado campus. These summits are an opportunity for all C2C In-Depth Partnership recipients to provide project updates, to exchange ideas with one another, and to receive feedback from other participating community organizations and national laboratories. Staff had a chance to learn from other participating agencies such as the Delaware Valley Regional Planning Commission, build relationships with project partners, and to explore NREL's campuses and learn more about the important work being done there.

Strategy prioritization and development. Working in tandem with the CAP process, CMAP developed a list of transportation decarbonization strategies and enhanced its understanding of Argonne's transportation modeling capabilities (Table 1). The C2C team is currently prioritizing a list of strategies to investigate in a first model run. A similar process is underway on the electric grid side. CMAP will soon begin to develop specific dimensions of each strategy and evaluation criteria for measuring the effectiveness of a given strategy on achieving the project's goals.

Table 1. Modeling categories and sample levers

Categories	Sample levers
Freight	Off-hours delivery, electrification, costs, etc.
Delivery	Service time, EVSE deployment, demand density, etc.
ITS & TDM	Congestion pricing, managed lanes, V2I/V2X, etc.
Electrification	Vehicle range and characteristics, EVSE deployment, costs, and charging time/speed
Transit / Multimodal	Service improvements, BRT, fare incentives, electrification, etc.
Land use	Zoning policies, growth boundaries, TOD, parking management, etc.
Traffic / Vehicles	Adaptive signal control, curb management, autonomous driving, etc.
Demand	Telecommutes, e-commerce, new mode adoption, long distance travel choices, etc.

Ride share	Pooling incentives, FMLM, fares and subsidies, etc.

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MEMORANDUM

To: CMAP Climate Committee

From: CMAP staff

Date: October 24, 2024

Subject: Regional planning approach update

Purpose: Background on the structure and benefits of a new, untried approach to fulfilling CMAP's federal and state planning responsibilities.

Action Requested: Information

Background

The Regional Planning Act (70 ILCS 1707/) requires CMAP to develop a regional comprehensive plan that integrates land use, transportation, and their relationships with economic development, the environment, air quality, energy consumption, and other issues impacting quality of life in northeastern Illinois. Per statute, the plan should guide the region's physical development and form the foundation for all planning in the region, with a special emphasis on the interactions between transportation and land use decisions.

As the designated metropolitan planning organization (MPO) for northeastern Illinois, CMAP is also mandated by federal regulations to develop and maintain a metropolitan transportation plan (MTP) that provides a comprehensive framework for transportation planning within the region. The MTP—also known as a regional transportation plan (RTP) or regional long-range transportation plan (LRTP)—outlines the long-term vision, goals, and strategies for the transportation system, addressing factors such as infrastructure needs, funding considerations, congestion management, safety improvements, and multimodal connectivity.

Since the agency was formed in 2005, it has fulfilled these federal and state responsibilities with the adoption of a single, large-scale regional comprehensive plan and its related update. Both GO TO 2040 (adopted in 2010, updated in 2014) and ON TO 2050 (adopted in 2018, updated in 2022) were the product of major, multi-year processes featuring extensive staff research, stakeholder engagement, and public outreach. Both award-winning plans helped the region to anticipate major challenges and opportunities, generate consensus on shared strategies, and evolve regional policy on difficult issues.

Staff have begun work on the next regional plan. This new plan will build on the successes of GO TO 2040 and ON TO 2050 while refining its approach in important ways. This memo describes key considerations of the new approach.

Learning from peer regions

To begin the scoping process, staff explored how peer agencies approach their comprehensive planning activities and found they rarely created one, large-scale plan that satisfies all state and federal responsibilities. Instead, similar agencies pursue a structure that allows multiple plans, adopted over time, to be considered together as the region's unified plan. Oftentimes, a "big picture" vision sets the macro-level direction that guides topic-specific action plans and initiatives on issues of regional concern. Examples of this approach are included below.

The **Metropolitan Council** (MetCouncil) is the metropolitan planning organization for the Minneapolis-St. Paul region in Minnesota. For decades, the MetCouncil has successfully implemented a similar approach, which begins by developing an overarching, directional vision —the most recent is known as "Thrive MSP 2040." This plan sketches out the long-term direction for the region's growth and development. The Metropolitan Council then develops several strategic or system plans focusing on specific topic areas, such as transportation, housing, regional parks, and water resources, to address their state and federal planning responsibilities.

Serving the Seattle-Tacoma region in Washington state, the **Puget Sound Regional Council** (PSRC) has adopted this approach by developing a regional vision, called "VISION 2050," which provides a comprehensive framework for the region's growth and development. Informed by the regional vision, PSRC develops topical plans focusing on transportation, economic development, and housing to translate overarching, topline values and objectives into content-specific policies and strategies.

The **Atlanta Regional Commission** (ARC) is the regional planning and metropolitan planning organization for the 11-county Atlanta region. ARC has established "One Great Region"—a three-fold vision for providing world-class infrastructure; fostering healthy, livable communities; and building a competitive economy. Informed by this regional plan framework, ARC develops topical plans including a regional economic strategy, a healthy communities plan, and a regional transportation plan.

A new approach to regional planning in northeastern Illinois

Drawing on these examples, CMAP is pursuing a new, untried approach to strengthen regional planning in northeastern Illinois. Under this approach, CMAP and its partners can set a bold, new vision that builds on the current plan's principles and priorities, while refining comprehensive planning practices in important ways over the next 5-10 years.

CMAP's regional vision plan will build on the significant progress and direction provided by previous work, while creating more flexibility than the agency's previous quadrennial planning cycle. Many of the ON TO 2050's strategies and recommendations remain relevant to the region's complex, lasting issues. However, a single plan represents a snapshot in time that cannot evolve and adapt to new and evolving priorities. For example, climate action, housing

coordination, or industrial strategies all require more dedicated and responsive planning than is feasible under the previous model. And addressing many of the region's longer-range, lasting challenges means working with coalitions on multi-year strategic initiatives in an ever-changing funding environment. CMAP's planning cycle needs to evolve to take advantage of these opportunities.

By implementing a regional vision, CMAP will work with its partners to define strategic priorities and commitments that will guide a range of more detailed planning activities over the next 5-10 years. Combined, the regional vision and subsequent regional action plans will serve as the region's comprehensive plan.

Anticipated benefits of transitioning to this approach
In addition to those already discussed, the vision approach has the potential to provide the following benefits:

Product improvements

- *Deeper analysis*: Topic-specific plans enable the region to conduct in-depth analyses and assessments of specific issue areas, leading to a more thorough understanding of the challenges, opportunities, and potential impacts. This depth of analysis enhances the quality of decision-making and ensures that strategies are evidence-based and actionable.

- *More tailored solutions*: Different issue areas often require unique approaches and solutions. Having separate topical plans allows the region to dig deeper and tailor strategies and policies to the specific needs and priorities of each area.

- *Enhanced public outreach and stakeholder engagement*: Developing a vision for the region provides an opportunity for high-level public outreach on "what" we must do as a region and "why" it matters to our residents. Developing topical plans enables more extensive engagement with key stakeholders on "how" we can approach curated issues. This approach would be geared to encourage meaningful and equitable participation from diverse stakeholders, fostering deeper collaboration and consensus-building.

- *Improved implementation and monitoring*: Having separate topical plans facilitates implementation and monitoring efforts, as progress can be tracked and evaluated within each topic area. This allows CMAP and its partners to identify successes, challenges, and areas for improvement, and make data-informed adjustments as needed.

Process improvements

- *Flexibility and focus*: By having multiple plans, the region can maintain flexibility to address new and existing challenges or opportunities focused within specific issue areas, while staying aligned with an overarching regional vision. Additionally, more tailored plans would no longer be tied to the four-year update cycle of federal transportation programming and could instead be updated on a cadence appropriate to each topic.

- *Breaking down planning silos*: A single comprehensive plan document requires an "all-hands-on-deck" approach to staffing, with subject matter experts focused on portions of the plan specific to their expertise. With topical plans developed on different timelines, the agency will have an enhanced ability to deploy cross-functional and interdisciplinary teams.

- *Alignment with regional goals*: By developing topical plans that are guided by the overarching vision for the region, the region can ensure alignment with our long-term goals and priorities. This coherence enhances the effectiveness and impact of the region's planning efforts, leading to more sustainable and equitable outcomes.

Next Steps

CMAP has begun developing a macro-level vision that will serve as the foundation for topical actional plans and strategies over the next 5-10 years. It will incorporate updated analysis on important regional issues, scenario planning to prepare for future uncertainty, a new statement of values to enable principled decision-making, and extensive community visioning. Staff will continue to discuss the region vision's development with CMAP's boards and committees ahead of its expected adoption in fall 2027.

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